Consumers Union REPORTS

JULY 1941 VOL. 6, NO. 7

PORTABLE RADIOS

HOW TO BUY A HEATING PLANT

FORD'S NEW SIX

NEW FINISHES FOR FABRICS

MEN'S SOCKS

KITCHEN KNIVES & SHARPENERS

WHAT DO YOU MEAN...

Membership?

"HOW'S *a membership in CU different from a subscription to any magazine? Why do you* subscribe *to the* Satevepost *and* become a member *to get Consumers Union Reports?"*

A LOBBYIST FOR THE CURTIS PUBLISHING CO. (*Satevepost, Ladies Home Journal*) once presented himself at a Congressional hearing as a representative of several million consumers, meaning the subscribers to the Curtis publications. That drew a smile even from other magazine men present.

As most magazine readers know, subscription revenue pays for only a fraction of the cost of getting out most publications. Income from advertising underwrites the rest. As a result, when the reader's interest conflicts with the advertiser's, there is considerable compulsion on the publisher to pay attention to the latter. He can't ignore his readers, to be sure, but at best he has a double-jointed obligation.

The fact of first importance about Consumers Union is that it really operates in the interest of consumers. It sells no advertising, which means that it owes allegiance to none but its readers. It accepts no contributions or support from any commercial interest, which further secures that allegiance. And it is chartered as a non-profit organization, which means that it has no incentive to exploit its allegiance.

Assurance that CU shall continue thus to operate in the consumer's interest is provided by the control that CU members themselves exercise.

That's what membership means first of all. It means the right that every member has to cast his vote each year in the election of CU's Directors, who execute the organization's policies. And it means each member's right to express his criticisms and suggestions concerning those policies—at any time by letter or in person and annually through the membership questionnaire—knowing that what he has to say will receive full consideration.

That's one way to clarify the meaning of membership in CU. There's another way. Flash to Washington, where a CU technician sits in a crowded committee room, presenting the consumer's case at a Food & Drug Administration hearing on food standards.

Says he, beginning his testimony: "I represent Consumers Union, a non-profit organization of consumers."

Move now to a meeting in New York City . . . or Chicago . . . or St. Louis. A local consumer group is planning a conference on rising living costs, on declining quality, on one of a hundred topics important to consumers. And on hand is a member of CU's Speakers Bureau, or a member of CU's staff, giving such advice as he can, helping to organize a program.

In short, CU does a good deal more than put into print the information its technicians, consultants and editors develop and assemble. Within the limits of its resources it applies that information in the consumer's interest wherever the consumer's interest is affected.

For CU is an organization, not just a publishing house, and an organization which has developed almost into a movement. Every test CU makes in its laboratories . . . every word it puts into the monthly REPORTS and the annual BUYING GUIDE and the weekly BREAD & BUTTER . . . every act it performs and, indeed, its whole existence is for the members of this movement. By the same token, the life of Consumers Union depends altogether upon the membership.

And CU's membership has accepted its responsibility. Members talk of CU to their friends and neighbors, give CU as a gift, sign up new members. Their enthusiasm has brought about a large part of CU's growth.

Some members—over a thousand of them now—take the job even more seriously. These thousand or more CU group leaders put on their own personal campaigns for CU membership. They give out CU leaflets where they work or where they meet their friends, they talk about CU, they sign up members in groups of 15 or more, at special group rates.

Who are these group leaders? Ordinary people working in offices, factories and schools; housewives, members of women's clubs or parents associations. Some work through cooperatives. A number are trade union members.

Ask one of these people why you "become a member" of CU, not just subscribe. They know the answer best, because the work they do is the answer. And as the consumer is pressed in on more and more by rising living costs, more and more CU members are taking up that work.

"Cooperating" with Defense

AN OLD proverb ascribed to the Italians has it that no more wonderful form of cooperation was ever invented than the cooperation between a man and his horse—only one must take care to be the man, and not the horse.

That's what cooperation with the defense program seems to mean to all too many profit-greedy corporations—a chance to ride the defense program into dividend heaven.

A recent but by no means insignificant arrival in this circle is the Chrysler Corp.

In late May and June, Chrysler raised prices $10 to $53, Ford upped his V-8 line $15 and slid the new *Ford Six* in at the old price, and advances were also announced by Nash, Hudson, and Studebaker.

On June 12th, Leon Henderson of the Office of Price Administration and Civilian Supply asked all five manufacturers to rescind the price advances, on the ground that they represented an inflationary tendency and were not justified by the profit positions of the companies.

No answer was received from Ford, but on June 25th Chrysler flatly refused to make the requested reductions.

As a result, Henderson withdrew his request to Hudson, Nash, and Studebaker, allowed Packard to institute a price rise which had been held up at Henderson's request, and announced his intention "to take the pricing of automobiles out of the hands of the industry" by setting mandatory ceilings on both new-car prices and used-car allowances beginning August 1st.

In strongly condemning Chrysler, Henderson observed that Chrysler's 1940 earnings amounted to $37 million, a modest 23% return on invested capital. Profits for the first half of 1941 were about $20 million, after allowing for taxes. The reduction requested would have totaled about $4 million, while Chrysler's total sales in 1941 will probably exceed $750 million.

Equally flagrant was the case of the furniture industry.

On June 24th, Henderson expressed disapproval of the "open" method of quoting furniture prices, under which prices are quoted as those prevailing at the time of shipment. He requested that no new price rises be made while recent advances were being studied.

Two days later several of the largest furniture manufacturers raised quotations again, some of them brazenly announcing that they were covering not only alleged cost increases in the past, but also increases expected in the future.

We appreciate Mr. Henderson's efforts to keep these gentlemen from eating the dishes right along with the meal. But the price rises and the shortages are coming so fast that he is beginning to resemble a man trying to stop up a sieve. If it isn't autos or furniture, it's steel, or oil, or aluminum, or shoes, or textiles, or refrigerators—we could almost fill this page with the list.

We shall be grateful for the price ceilings on autos which Mr. Henderson promises for August 1, but in the meantime consumers will be mulcted of large sums.

Irresistible consumer pressure is needed in favor of emergency action to stop this conscienceless price-gouging accompanied by pious phrases about "cooperating with defense."

Some hard-hitting agency has *got* to go to bat *now* armed with the understanding that in the present situation mere scarcity justifies no price rises whatsoever; that a corporation making 23% profit is already getting away

IN THIS ISSUE

The purposes of Consumers Union, as stated in its charter, are "to obtain and provide for consumers information and counsel on consumer goods and services . . . to give information and assistance on all matters relating to the expenditure of earnings and the family income . . . to initiate and to cooperate with individual and group efforts seeking to create and maintain decent living standards for consumers."

TECHNICAL SECTION

Men's Socks: Ratings of 47 Brands	173
The New Ford Six	175
Heating Equipment: How to Buy What	176
Kitchen Knives: Test Results & Ratings	179
Knife Sharpeners: A Comparison of Kinds	181
Portable & "Personal" Radios: What the Tests Show	183
Batteries for Radios	186
Fabric Finishes: Some Buying Guidance	187

MEDICAL SECTION

The "Bulk-Producing" Laxatives	189
Knox Gelatin & the FTC	190
Teel vs. Its Competitors	191

NEWS AND INFORMATION

On the Horizon	172
CU's Annual Meeting, Elections & Conference	192
Taxes: The New Program	193
Labor Notes: Men's Socks, Radios, Knives	194

ARTHUR KALLET, *Director* — **DEXTER MASTERS**, *Publications Director*

BOARD OF DIRECTORS: Harold Aaron, Hartley W. Cross, Jerome Davis, Ned H. Dearborn, Osmond K. Fraenkel, A. J. Isserman *(Counsel)*, Arthur Kallet, Paul J. Kern, Raymond E. Kirk, William M. Malisoff *(Special Technical Consultant)*, George Marshall, Dexter Masters *(Secretary)*, Walter Rautenstrauch, Bernard J. Reis *(Treasurer)*, Adelaide Schulkind, Sidney Wang *(Staff Representative)*, Colston E. Warne *(President)*, Goodwin Watson, Gerald Wendt.

CONSUMERS UNION OF UNITED STATES, INC. is a nonprofit organization chartered under the Membership Corporation laws of New York and deriving its income from membership fees. It is sponsored by more than 70 educators, social workers and scientists (names on request). It has no connection of any kind with any commercial interest and accepts no advertising.

MEMBERSHIP FEES: $3.50 a year with subscription to *Reports* and *Buying Guide;* $4 for *Reports* and *Buying Guide* plus *Bread & Butter* (weekly news report); Foreign and Canadian memberships 50c additional ($1.25 with *Bread & Butter*). Reduced rates for groups of 15 or more. Library rates $3 for *Reports* alone.

CORRESPONDENCE should be addressed to Consumers Union, 17 Union Square, New York City. CU regrets that time does not permit answers to inquiries for special information.

JULY, 1941 — VOL. 6, NO. 7

Consumers Union Reports is published monthly by Consumers Union of United States, Inc., at North Broadway, Albany, N. Y. Entered as second-class matter June 1938 at the postoffice, Albany, N. Y., under the act of March 3, 1879.

Copyright 1941 by Consumers Union of United States, Inc.

Consumers Union Reports is Prepared and Edited Under Union Conditions by Contract With the Book and Magazine Guild.

with murder; that those much-paraded "cost increases" are frequently if not usually more than offset by the savings attendant upon capacity operation; and that the welfare of American consumers is infinitely more important than the appetites of the proponents of fat dividends.

What's Happening to Quality?

THERE are, of course, two ways to raise a price. One way is just to raise it, like the automobile companies and the furniture manufacturers up above did. The other way is to leave the price alone and cut down on the quality of what the consumer gets.

The second method is becoming very popular as the days pass, and there are very good reasons (from the seller's viewpoint) for that.

If a manufacturer does his quality-cutting skilfully he can count on most of his customers not even noticing it for awhile and by cutting quality he doesn't have to disturb existing price ranges or stir up sales resistance, as he does if he gives his prices an out-and-out boost.

Thus a shoe manufacturer, for example, can keep a popular $4 number at $4 but use cheaper grades of leather or leather substitutes in part. In effect, he can offer 10% less shoe for the old price instead of a full-quality shoe for a 10% higher price.

This sort of thing is going on, and going on increasingly. CU members who get *Bread & Butter*, CU's new weekly, will be familiar enough with what's happening. *Bread & Butter* has itemized dozens of such deteriorations in products.

At this writing, in fact, the evidence seems to warrant the conclusion that quality standards are on the verge of a complete breakdown.

We have heard from technical people in the textile field that technical work related to the setting and maintenance of quality standards has fallen off markedly. We know that many retailers have a just complaint in that, increasingly, they themselves don't know the quality of what they're selling; it changes too fast and too quietly.

We do not say all manufacturers or all industries are taking part in this debasing of quality; we do say a growing number are. Consider such an item as this from a recent issue of *Bread & Butter*.

> . . . Control over prices of miscellaneous manufacturers, particularly at retail, is exceedingly difficult. . . . Price increases can often be effected indirectly through changes in the size of containers or in quality that cannot be detected without great effort. (*Journal of Commerce*, May 12, 1941.)

Now what do you make of that? What we make of it is that the consumer is being put on the spot. And it throws as much light as anyone needs on the fact that price controls don't mean a thing unless they are matched all the way by quality standards. Control of price and control of quality are two sides of the same coin.

All these things being so, we note with great satisfaction that a quality standards section is being formed in Harriet Elliott's Consumer Division of the Office of Price Administration and Civilian Supply.

It is long overdue, but the important thing is that it is now being set up. As we understand it, the new section will undertake to keep a watch on what's happening to quality, to apply standards in specific cases, and to see that they're maintained, once applied.

That's no small job, but we hope we understand it right. For that's the job that has to be done.

On The Horizon

☛ Tough talk and indictments (all too frequently followed by mild "consent decrees") are important parts of the stock-in-trade of Thurman Arnold's Anti-Trust Division of the Department of Justice, but recent indictments do reveal an alarming situation in the food field.

Current lawsuits concern price-fixing of bread in Washington, illegal grocery price rises in Connecticut, price gouging of 2½¢ to 3¢ per can in the canned-pea industry, and general price-fixing by the largest distributors of milk.

☛ The current alarming East Coast oil situation, which has brought threats of ration cards and "gasless Sundays" has afforded an excellent opportunity for general price rises in gasoline and fuel oil, even in parts of the country not affected by the current oil tanker shortage. Did we overhear someone say something about our shipments of oil to Japan?

☛ New Federal Trade Commission hosiery code, due to go into effect this month, seems likely to diminish one of the oldest sharp practices in the hosiery trade. In the past ordinarily only one stocking of each pair was marked, and some of the largest stores apparently took the unmarked stockings from irregular, imperfect or below-standard pairs and sold them as top quality. In addition to providing other standards, the new code requires that both stockings of each pair be marked. *This code does not apply to nylon, however.*

☛ The current ugly situation in steel bids fair to exceed the aluminum fiasco of a few months ago. First, an industry expert (Gano Dunn) estimates that there will be plenty of steel both for 1941 and for 1942. Therefore, no need for expansion. A few months later he revises his figures and predicts a small shortage this year and a serious one next. Whereupon the steel industry begs for priorities and starts a campaign against any kind of expansion—on the ground that expansion would use steel facilities at a time when there is a serious shortage. Cute, isn't it?

☛ The steel picture is likely to be duplicated in railroads, where industry representatives as well as "government experts" are assuring that there is plenty of capacity in the foreseeable future. The railroads have even offered to take care of the impending Eastern oil shortage. The truth is that serious transportation difficulties seem imminent, probably in the Fall. CU members will recall that nearly two years ago (October 1939 REPORTS) CU predicted such difficulties and urged action to prevent them. There was no action adequate to meet the shortage.

☛ CU will gladly contribute 2¢ toward the cost of a special award to the cosmetic industry, in which (according to the Federal Trade Commission) the profits and advertising costs of nine large concerns in 1939 amounted to no less than six times the total production wages and salaries paid.

☛ Highlighting the fate of the manufacturer who advertises not wisely but too well, various drug makers may soon lose valuable trademarks. The reason is an old legal principle that any trademark becomes public property if through common usage it is "incorporated into the language as the usual generic description for an article of that type." This has already happened in the general field to cellophane, aspirin, shredded wheat, and other brand names.

☛ Recent government and private barrages against installment selling, culminating in National Retail Credit Association's proposal of 20% down payment and balance in four to 16 months, indicate that drastic action is inevitable soon. But the serious flaw in curtailing consumption via this means is that only the lower incomes are affected: wealthy buyers can pay cash.

TECHNICAL SECTION
OF CONSUMERS UNION REPORTS

Ratings of products represent the best judgment of staff technicians or of consultants—more than 200 specialists selected for competence and freedom from commercial bias—in university, governmental and private laboratories. Samples for test are in practically all cases obtained on the open market by CU's shoppers. Ratings are based on laboratory tests, carefully controlled use tests, the opinion of qualified authorities, the experience of a large number of persons, or on a combination of these factors. Most ratings of necessity reflect opinion as well as scientific data. For even with rigorous tests, interpretation of findings is often a matter on which expert opinion differs. It is Consumers Union's pledge that such opinions as enter into its evaluations shall be as competent, honest, and free from bias as it is possible to make them.

• "Best Buys" should give greater return per dollar although some products rated "Also Acceptable" may be of higher quality. Except where otherwise noted, a product rated "Not Acceptable" is judged to be of inferior quality or is considered to be potentially harmful.

Men's Socks

It's harder to get a good buy than you may think. Herewith some pointers and some ratings

IF YOU want to get the greatest possible comfort and economy from your socks, you'd better pay careful attention to the size you buy. If you don't know your correct size, consult the table below, compiled by the Research Bureau for Retail Training at the University of Pittsburgh. It's a particularly good guide with recommendations more generous than those of other similar compilations.

Shoe Size	*Sock Size*
5½ to 6	9½
6½ to 7	10
7½ to 8	10½
8½ to 9	11
9½ to 10	11½
10½ to 11	12
11½ to 12	13

Once you know your correct size, make sure you get it. Often socks are marked incorrectly. And even if they're the right size when you buy them, they may not fit after they've been washed.

Many manufacturers "board" their socks—that is, they knit only two or three sizes and then stretch or shrink these to complete the size range. By this method they may use a size 9 sock to provide all the sizes from 8 to 10. Naturally, after the sock is washed, it reverts to its original size.

If you can't be fitted perfectly by the standard sizes, it's better to get a larger, rather than a smaller size. The smaller size will be less comfortable and more likely to push through at the hoes and wear out at the heels.

A report on labor conditions in the men's socks industry appears on page 194.

THE WEAR you get out of socks depends to a large extent on their fiber content. Cotton and lisle hose are by far the best buys in this respect. Though nylon wears just as well and is lighter, it's considerably more expensive. The same is true of unweighted silks.

Rayon mixed with cotton makes a good appearance and is almost as strong as plain cotton. But rayon has inferior lasting quality because foot perspiration weakens the fibers.

CU tests showed that cotton or lisle hose reinforced at the heel and toe outwore all other fibers. Reinforcements are important; but make sure that the reinforcements cover a sufficient area. If they're skimped or don't cover all the points of extra wear, the points where the reinforcements meet the rest of the sock will wear out more quickly than if no reinforcements were present at all.

Hose with finely knit textures should have special reinforcements knitted into that part of the sock above the heel pocket. This is called a heel splice. It's good for any sock, but it's an absolute necessity in finely knit rayon, silk, or lisle hosiery.

FANCY patterns are made in a multitude of ways—by using types of fibers which color differently in the same dye, by attachments to the knitting machine, or by hand embroidery. Since some of these methods produce weakness in socks, it's a good idea to shun complicated patterns as much as possible.

If you must have gay designs, make sure that they're not formed by dropped stitches or "floating" threads. You can tell whether stitches have been dropped by holding a sock against the light and looking for openwork. Sometimes, to form a design, hose are knitted with two sets of yarns fed into the machine, one above another. The needles are placed so that many of them catch only the bottom yarn; the top yarn forms the design. Because these "floated" threads aren't firmly anchored, they tend to catch and pull out. Worst of all, they lessen the elasticity of the hose.

Designs made by reverse plating, on the other hand, don't interfere with the wearing quality of socks. Look inside of the sock. The weave there should be the same as that on the outside, except with colors reversed.

If you're a stickler for perfect fit, you may prefer full-fashioned socks to the more common seamless variety. Full-fashioned hose are made flat and shaped by knitting stitches together at various points. They're no stronger than seamless socks, they don't last any longer, and the additional advantages of fit aren't really necessary. Also full-fashioned hose have a seam which may be uncomfortable so it's best to stick to seamless varieties.

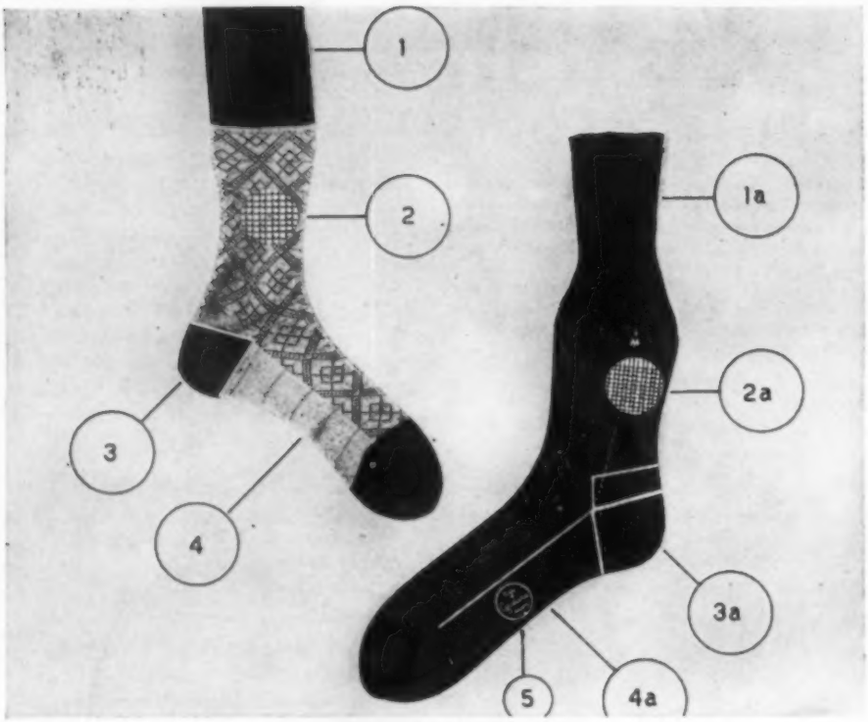
Some men like self-supporting socks with attached garters or elastic tops. These have the disadvantage of being non-adjustable, and are sometimes tight enough to restrict circulation.

Better buys are ankle high socks with tight ribbings which stay up without elastics. Comfortable and nice-looking, they're especially good for summer wearing.

Since both socks in a pair seldom wear out at the same time, it's a good idea to buy at least two pairs of each variety, so that the good socks can be matched up as their mates wear out.

To minimize as much as possible the destructive effects of perspiration, socks should be washed soon after each wearing. Use mild laundry soap and not-too-hot water. Many brands aren't colorfast; therefore, it's best to wash only batches of one color in the same water.

WHEREVER possible CU purchased similar models of cotton, cotton and rayon, nylon, and reinforced cotton socks of each brand. One pair of each style was tested for fit and shrinkage, bursting strength of welt and boot, and abrasion resistance of heel, toe and sole. Tests for fit and shrinkage were made before



A STUDY IN CONTRASTS

On the left you may see what a man's sock should not be; on the right is a well-made product. 1) Loose stretchy top; 1a) tight, well-fitting top. 2) Loose weak weave; 2a) close strong weave. 3) Skimpy heel pocket, no high splice; 3a) roomy heel pocket, adequate high splice. 4) Foot is not reinforced despite deceptive alteration in pattern; 4a) foot reinforced with strong cotton yarn. 5) Fiber content identified.

and after washing (brands which were too small after washing were rated as "Not Acceptable"). Socks which were slightly large or small before washing, but measured up to marked size after washing, were considered satisfactory.

COTTON

Best Buys

The following socks of the "Acceptable" list are judged to offer most value for the money. See listings below for full details.

Sears' Cat. No. —2040. 29¢ plus postage.

Woolworth. 25¢.

Acceptable

(In order of quality without regard to price)

Interwoven (Interwoven Stocking Co., New Brunswick, N. J.). 50¢. 6x3 rib.[1]

Wilson Bros. (Wilson Bros., Chicago). 50¢. 6x3 rib.

Sears' Cat. No.—2040 (Sears-Roebuck). 29¢; 3 pairs for 85¢ plus postage. Patterned rib. Regular length. Available in short length with elastic top as Cat. No. —2041.

Westminster (Nolde & Horst Co., Reading, Pa.). 50¢. 6x3 rib.

Woolworth (F. W. Woolworth Stores). 25¢. 10x6 rib.

Holeproof (Holeproof Hosiery Co., Milwaukee, Wis.). 50¢. 6x3 rib.

Phoenix No. 593 (Phoenix Hosiery Co., Milwaukee, Wis.). 35¢. 6x3 rib.

Ward's Cat. No.—687 (Montgomery Ward). 23¢; 4 pairs for 89¢ plus postage. 6x3 rib. Available in short length with elastic top as Cat. No. —677. With clocks, Cat. No.—684 (regular length); Cat. No.—685 (short length). 35¢; 3 pairs for $1 plus postage.

Thom McAn (Thom McAn Shoe Stores). 25¢. 9x5 rib.

Real Silk No. 50 (Real Silk Hosiery Mills, Indianapolis, Ind.). 50¢. 12x6 rib.

Real Silk No. 47. 90¢. Flat knit hose with ribbed top.

Not Acceptable

The following hose showed excessive shrinkage.

Ward's Cat. No.—646. 15¢; 3 pairs for 42¢ plus postage. Short length with elastic top. Plaid design. Shrank half size.

Kinney. 25¢. Fancy rib. Shrank full size.

Woolworth. 10¢. Hose had rib made by dropping stitches. Lowest quality tested. Shrank half size.

[1] 6x3 rib is knit on a special machine, invented in England, which produces a sock having 6 ribs on the face, and 3 on the back of the fabric. This type of sock has greater elasticity than plain-knit hose.

COTTON and RAYON

Best Buy

The following pair of socks of the "Acceptable" list is judged to offer the most value. See listing below for full details.

Sears' Cat. No. —1992. 9¢ plus postage.

Acceptable

(In order of quality without regard to price)

Munsingwear (Munsingwear Corp., Minneapolis, Minn.). 50¢. Cotton welt, heel and toe.

Holeproof (Holeproof Hosiery Co.). 50¢. Cotton welt, heel and toe. Nylon reinforcement in toe.

Westminster (Nolde & Norst Co.). 55¢. Cotton welt, heel, sole and toe. Full-fashioned.

Sears' Cat. No.—1992 (Sears-Roebuck). 9¢; 4 pairs for 35¢ plus postage. Available in short length with elastic top as Cat. No.—1926. Cotton welt, heel and toe.

Phoenix (Phoenix Hosiery Co.). 50¢. Embroidered clock. Cotton welt, heel, toe.

Phoenix. 35¢. Cotton welt, heel and toe.

Schulte (Schulte Cigar Stores). 29¢. Linen reinforced heel and toe. Reinforcement covers too small an area.

Wilson (Wilson Bros., Chicago). 50¢. Cotton welt, heel, sole and toe. Full-fashioned.

Interwoven (Interwoven Stocking Co.). 50¢. Embroidered clock. Cotton welt, heel and toe.

Woolworth (F. W. Woolworth Stores). 25¢. Heel and toe reinforced with linen.

Holeproof. 50¢. Cotton welt, heel and toe.

Not Acceptable

The following showed excessive shrinkage.

Thom McAn. 20¢. Cotton welt, heel and toe. Shrank full size.

Kinney. 20¢. Cotton welt, heel and toe. Shrank half size.

Ward's Cat. No.—647 (Montgomery Ward). 13¢. Shrank half size.

COTTON REINFORCED

Best Buys

The following socks of the "Acceptable" list are judged to offer the most value. See listings below for full details.

Sears' Cat. No.—1403. 29¢ plus postage.

Sears' Cat No.—2038. 25¢ plus postage.

Longwear. 40¢.

Acceptable

(In order of quality without regard to price)

Westminster (Nolde & Horst Co.). 50¢. 6x3 rib. Nylon reinforced toe.

Interwoven (Interwoven Stocking Co.). 50¢. 6x3 rib. Nylon reinforced toe, heel.

Longwear (New Process Co., Warren, Pa.). 40¢. 6x3 rib. Nylon reinforced heel and toe.

Phoenix No. 583 (Phoenix Hosiery Co.). 50¢. 6x3 rib. Nylon reinforced heel and toe.

Westminster. 50¢. Cotton reinforced heel and toe.

Sears' Cat. No.—2038. 25¢; 4 pairs for 95¢ plus postage. Available in short length with elastic top as Cat. No.—2039. 6x3 rib. Nylon reinforced toe.

Sears' Cat. No.—1403. 29¢; 3 pairs for 85¢ plus postage. Available in short length with elastic top as Cat. No.—1404. Linen reinforced toe.

Schulte (Schulte Cigar Stores). 29¢. 3x3 rib. Linen reinforced toe.

Phoenix No. 5331. 50¢. Fancy ribbed hose, with extra reinforcement in heel and toe.

Not Acceptable

(The following hose showed excessive shrinkage)

Woolworth. 15¢. Ribbed hose with ribs made by dropping stitches. Nylon reinforced toe. Shrank half size.

Thom McAn. 25¢. 6 x 3 rib with nylon reinforced toe. Shrank half size.

NYLON and CORDURA RAYON

Acceptable

(In order of quality without regard to price)

Real Silk (Real Silk Hosiery Mills). $1.35. 6x3 rib. Nylon hose with cotton reinforced heel and toe.

Westminster (Nolde & Horst). $1. Nylon hose with Nylon reinforcement in heel and toe.

Interwoven (Interwoven Stocking Co.). $1. Nylon hose with cotton reinforced heel, toe and sole.

Sears' Cat. No.—357 (Sears-Roebuck). 79¢; 3 pairs for $2.25 plus postage. Nylon hose. Mercerized cotton sole and welt, extra heavy nylon toe. Heel reinforced with cotton.

Phoenix No. 285 (Phoenix Hosiery Co.). 75¢. Nylon hose with cotton sole and welt. Cotton reinforced heel and toe.

Holeproof No. 430 (Holeproof Hosiery Co.). 50¢. Nylon hose with nylon multiplated heel and nylon reinforced toe.

Holeproof. 50¢. Cordura rayon with cotton reinforced heel, sole and toe.

Not Acceptable

(The following hose showed excessive shrinkage)

Ward's Cat. No. —689. 35¢; 3 pairs for $1 plus postage. Short length with elastic top as Cat. No.—688. Cordura rayon with nylon reinforced heel and toe. Shrank half size.

The New Ford Six

. . . is a better buy than the V-8 for average driving needs

ENOUGH information about the new *Ford Six* is now available so that comparisons can be made between it and the V-8 which has been the Ford standard-bearer since 1932. The new 6-cylinder engine goes into the same chassis as the V-8 and costs about $15 less at present. The number so far produced is small but is increasing.

The Six is not a "companion" car to the V-8. Still less is it an economy car, like the unsatisfactory and abandoned Ford 60. (Ford has a satisfactory economy engine, used in the smaller trucks.)

The new Six is what Ford might have built instead of the V-8 in the first place, at a saving to himself and to millions of his customers.

MILEAGE How do the two cars compare? So far as mileage per gallon is concerned, that will not be much different on the new car, but any difference there is will probably favor the Six. The built-in gas mileage will be maintained longer on the Six without adjustment.

ACCESSIBILITY Accessibility, as reflected in the cost of working on the engine, will be slightly better on the new model. Full details on this point are still lacking. Owners' costs for repair parts should be lower, if only because there are fewer parts. The Six will require considerably less fussing with. It is easier to tune up, and it will stay in tune longer.

ENGINE The new engine is "bigger" than the V-8. Its piston displacement is greater (226 cubic inches as against 221), and it develops more horsepower (90 as against 85, as rated by Ford engineers), and it is a more efficient engine. Its compression ratio is higher, but not high enough to require premium fuel. The new powerplant weighs roughly 30 pounds less than for the V-8. Like the 8, the new Six is an L-head or side-valve engine. Similarly, the valves are non-adjustable and the ignition distributor is driven directly by the camshaft.

The big contrast between the two engines is in their "performance" or pulling power. (As explained in the February Auto REPORT, maximum horsepower is no guide to medium-speed performance.) Maximum pulling power for the V-8 is reached only at the comparatively high car speed—in high gear—of 47 miles per hour. The Six pulls its maximum at 26 miles per hour. It will accelerate and climb hills very much better at all speeds below 40, and has considerably more power available at all speeds below 70.

Engine revolutions per mile will, of course, be the same for both cars if the same rear axle ratios are used. The standard *Ford* ratio has been 3.78 to 1, with 3.54 to 1 available as an economy ratio. However, the Six with the economy axle pulls as well as the standard V-8 at the higher speeds and much better below 40.

The pistons are specified as aluminum or steel, but the latter undoubtedly will be used now. In the Six they travel considerably farther for each mile the car runs than do those of the V-8 or the *Chevrolet*, for example. They do not travel so far as those of *Plymouth* or *Studebaker*. The Six is at a disadvantage on this point, though the cylinder sleeves now used by Ford may aid in combating wear.

Normally, there is less vibration in an 8-cylinder engine than in a six, particularly at very low and very high speeds. How well the rubber engine mountings of the *Ford Six* will control this vibration remains to be learned, but most other sixes are satisfactorily smooth. It is expected that the Six will operate more quietly than the V-8, which has a distinctive "power roar" on acceleration.

THE SIX OR THE V-8? Which *Ford* model is the better buy? The above summary should leave little doubt on this score. The Six will be much more suitable for average driving needs. Besides this, it costs less to begin with, and will also cost less to maintain and repair. As brought out in the June REPORTS, neither *Ford* will be a particularly good buy where maximum operating economy and gasoline economy are most desired.

WHEN TO BUY

IN THE case of the *Ford Six*, the usual caution must be made against buying a new model until:

1. Small but inevitable engineering mistakes have been rectified;

2. Enough units have been produced so that the assembly lines are thoroughly familiar with the new unit and can turn it out without hitches.

In normal times, two or three months is sufficient for production to be "shaken down." A somewhat longer time is needed for engineering corrections to be incorporated.

How to Buy a Heating Plant

In this report CU's consultant discusses the relative merits and uses of seven popular types of heating systems. With some pointers on how to buy whatever you decide to buy

IN THIS issue CU reports on types of heating equipment so that homeowners in the market for a plant can decide which type meets their particular requirements. In a subsequent issue CU will report on firing methods—hand or automatic (stoker, oil and gas burners) —and types of fuel—coal, coke, gas, and oil.

HEATING is undeniably a technical subject. And so you are very apt to hear Mrs. Jones observe, "We are having steam heat installed," and Mrs. Smith reply brightly, "My husband prefers an oil burner."

The type of heating plant used and the means of firing it are, of course, two different things. And if you're interested in getting the most for your money and efficient heat as well, you'd better know even more than that. For heating equipment and methods run a wide gamut of prices and quality differences, and what's good for one kind of house is not necessarily good for another.

That's one reason the consumer owes it to himself to know what and why he's buying when he buys heating. And another reason is that heating costs are among the biggest items in the household budget. What with impending shortages and price rises, these costs are probably going higher than ever next Winter. So, we advise, think about your heating problem now, and plan sensibly for the future.

TYPES OF HEATING SYSTEMS

WHEN a homeowner starts out to select new heating equipment or replace an old plant, he's faced by two questions:

1. Out of seven possible types of heating plants, which one should I buy?

2. Should this plant be hand fired or should it be automatically fired with a coal stoker or an oil or gas burner?

So far as types are concerned—and that's what this report deals with—the homeowner can choose between two basic systems: furnaces and boilers. In a furnace cold air is heated in a space around a hot firebox and then allowed to escape through grills or registers into upper rooms. In a boiler either water or steam carries the heat.

Most of the furnaces and boilers in use today are designed with grates to burn hand-fired coal, but are capable of being converted to firing by oil, gas or stoker. Contrary to the claims of manufacturers and salesmen pushing special plants for stokers and oil burners, boilers and furnaces designed for hand firing are often excellent for automatic firing equipment.

For the homeowner who is about to install a complete new system, there are some advantages in selecting a furnace or boiler to match the fuel and firing method. But salesmen tend to exaggerate these advantages, and the homeowner who has a hand fired plant of ample size for his house, of good design and in good repair, will not lower his fuel bills by switching to a special boiler or furnace when he installs an oil burner or a coal stoker.

PIPELESS FURNACES Three types of furnace (warm air) heating are available. The simplest and least expensive of these is the pipeless heater plant. In this system cold air is drawn through the outside corners of a floor register to the furnace where it is heated and then allowed to rise through the center of the register in a single column.

Because it tends to cause drafts and cold floors and does not thoroughly heat any room except the one under which it is located, CU classes the pipeless heater as "Not Acceptable" for typical homes.

A more effective substitute in many cases is a good modern stove which will heat the living room and adjacent rooms, and a coal or oil cook stove. Grills and registers above the doors between rooms and to upstairs rooms will help circulate the heat. In some cases, however, pipeless heaters may be preferable to modern stoves—for small weekend cottages, and for stores and business buildings where floor space is limited and is considered more important than cold feet.

GRAVITY WARM AIR FURNACES Gravity warm air furnaces are more efficient plants. In this type of heating system pipes conduct warm air to registers in every room, and carry cold air from ground floor rooms to the furnace. The system is simple, but capable of affording good heat for a house which has no exceptionally difficult-to-heat rooms. There are no steam or hot water radiators to take up space.

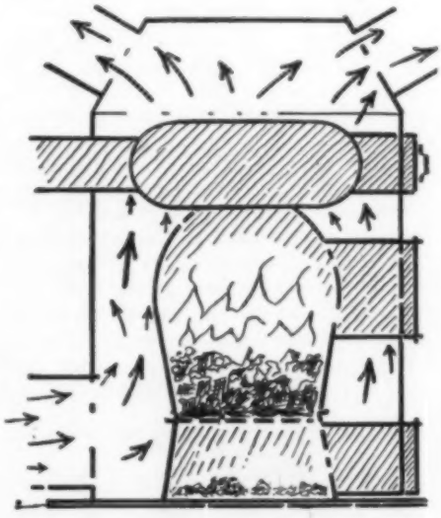
Like any furnace system this one may be fitted with a "water leg" which will heat a water storage tank more or less satisfactorily during the Winter. A humidifying device of some kind, perhaps a pan or a bucket, generally is included, but an automatic humidifier may be installed. Both the initial cost and upkeep are low, as well as fuel consumption.

The gravity warm air system is, therefore, a "Best Buy" for thousands of owners of small homes in the $3,500 to $8,000 class; it is excellent for an owner of a house which is easy to heat, even though he often tends to favor a more elaborate system.

FORCED CIRCULATION WARM AIR FURNACES Glorified as "Winter air-conditioning plants" are the forced circulation warm air furnaces which have a motor-driven blower to suck cold air into the furnace and drive warm air through pipes to all parts of the house. The inclusion of air cleaners and automatic humidifiers give rise to the claim of "air-conditioning." These features, however, are more important in sales literature than in actual operation in homes.

Both the humidifiers and filters are likely to be troublesome and expensive because of need for frequent replacement. Many owners remove broken appliances, fail to install new ones, and report that they notice no difference in the condition of the air when the "conditioners" are lacking.

In spite of the doubtful advantages of



WARM AIR FURNACE

Which one you buy depends . . .

the air-conditioning features, the forced circulation warm air plant is an excellent heating system for the large number of homeowners who prefer furnace to boiler heat. The forced circulation of air produces comfortable warmth in hard-to-heat rooms, such as sun rooms with their large expanse of glass, or rooms located far from the furnace in wings or upper floors.

It is superior to the gravity system because it occupies less space. It is convenient in a low-ceiling basement—because pipes don't need to have a gradual slope—and in the new type of home with no basement it is excellent since it can be installed in a small utility room or even in the garage or kitchen.

The great disadvantage of forced circulation compared with gravity warm air plants lies in the blower. This appliance needs periodic attention, is subject to breakdowns, and in many homes makes just one more annoying noise of running machinery. In addition it uses electricity in amounts important to the small homeowner.

The owner of a six-room house can expect to pay (at 5¢ or 6¢ per kilowatt hour) not less than $2 a month in normal Winter weather. In the coldest weather the cost may be as high as $6 or $8 a month. The failure of electric current or a breakdown in the blower itself means the stoppage of heat circulation throughout the house.

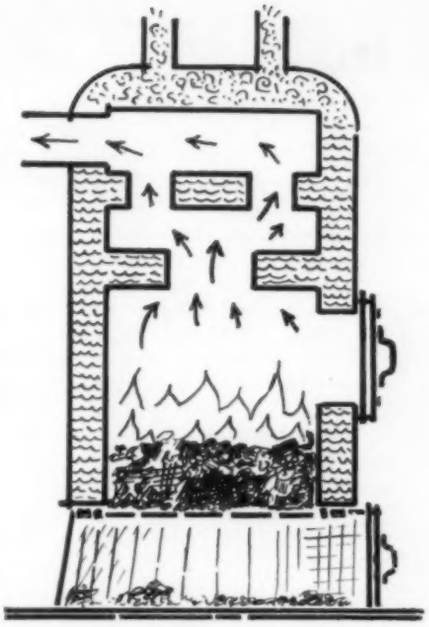
Consequently, CU recommends that homeowners favor heating plants which are not motorized, if they desire minimum heating costs and electric bills, quiet in the home, and avoidance of bills for repairs and adjustments. If a gravity warm air furnace fills your heating needs satisfactorily, stick to that type and consider yourself fortunate.

BOILER SYSTEMS

THE ADVANTAGES of boiler-radiator heating plants should be carefully considered before you install a new system. They are superior to furnace heating in that radiators of sufficient size will heat practically any room, however far from the boiler or with any amount of glass or unheated space above or below. Sun rooms may be impossible to heat by any other method.

Another advantage is that radiators do not transfer steam and odors from one part of the house to another as will a warm air system, especially if equipped with a blower.

Housewives and interior decorators, however, often object to boiler systems because of the radiators, which they condemn as space-taking eyesores. If you find bare radiators too objectionable, you can enclose them in metal jackets pro-



HOT WATER BOILER

. . . upon your requirements and resources

vided that you increase the size of the radiator 20%. This is a better solution to the problem than that of installing concealed radiators—those built into the outside walls.

Concealed radiators are generally costly, and in most homes, owing to the thinness of the walls, must be installed without insulation adequate to prevent the flow of heat to the outside. The arrangement increases fuel bills greatly, besides giving poor heating.

Boiler plants are well adapted for use with attached indirect water heaters. If the boiler is fired automatically, hot water may be had the year round; if hand fired, hot water will be available during the heating season only. Steam boilers can be converted to produce hot water more easily than hot water systems, and with less expense.

STEAM BOILERS The least expensive and most practical boiler system for a small or average house is a one-pipe steam plant. Improvements in this type in the last few years have made it practically as effective as the two-pipe system, and have destroyed the latter's usefulness for private homes. CU advises homeowners to install a one-pipe system if they want simple, good steam heat, and to favor a hot water plant if they desire something more elaborate.

To get the maximum effectiveness from a steam plant, you should combine it with an automatic firing mechanism, and not depend on hand firing. The "on-off" operation of the automatic stoker, oil burner, or gas burner maintains uniform heat, which is impossible with hand firing. If hand firing is to be used with a steam boiler, you should install an automatic room thermostat to regulate the supply of heat.

In spite of the fact that steam plants tend to use more fuel than hot water systems, low initial cost and adaptability to year-round hot water heaters (if automatically fired) make the one-pipe boiler a "Best Buy" for small and medium homes. Fuel expenses should not run more than 10% (automatic firing) or 20% (hand) higher, and you can save some of this by putting good insulation on the boiler and basement pipes.

HOT WATER SYSTEMS Hot water systems have several advantages over steam plants. Besides being cheaper to operate they provide superior heating in mildly cold weather.

You can keep a small fire in the boiler of a hot water plant, and every radiator in the house will give off a small amount of heat. But if you try to maintain a low fire in a steam boiler, some radiators will give off too much heat and others will remain cold. Moreover, you don't need to have a basement for a hot water heater; it will operate successfully from a room on the ground floor.

There are disadvantages to this type of plant, however. To get sufficient heating surface, larger radiators are needed than for steam boilers—60% larger if the boiler is hand fired, 30% if it is fired automatically. (Some heating contractors aren't aware that smaller radiators can be used for hot water systems if the boiler is fired automatically, but they should be.)

Also, with a hot water system you must fill the pipes with water before firing the boiler, and drain the pipes whenever the house isn't being used during cold weather. For this reason hot water plants aren't suitable for weekend cottages or "part-time" homes. Nor are they well adapted to producing hot water for faucets.

For normal use, however, gravity hot water heaters (ones without motorized circulators) are a "Best Buy" for homeowners who can afford to make a long term investment to get dividends in the form of lower fuel bills, and who have a separate heater for hot faucet water. The superior, even, noiseless heat and low-cost upkeep of gravity hot water heaters make them a better buy than steam plants for homeowners who can afford the extra initial cost and get their hot faucet water separately.

Consumers who want, and can pay for, luxury heating, should consider a forced circulation hot water heating plant. More

expensive to install and operate and subject to all the disadvantages of a motorized system—noise, yearly electric cost, more or less frequent servicing, and possible interruption of heat production—it can't be surpassed even so at providing closely controlled temperatures and even, instantaneous heat.

Rooms distant from the boiler receive heat as quickly and evenly as nearer parts of the house. Since hot water is always stored in the boiler, heat is secured from the radiators a few minutes after the circulator is started by the room thermostat.

But because of the expense and troublesome upkeep, CU recommends that owners of any but very large homes pass over forced circulation hot water plants and buy instead—if boiler heat is desired—a steam or gravity circulation hot water plant.

SPLIT SYSTEMS

FOR wealthy homeowners or those of medium income who are determined to have the absolute best in heating comfort, split systems of heating are the answer. They combine all the advantages of furnace and boiler systems.

With this type of heating you can have registers in the main rooms of the house —where space and appearance are important — and radiators in distant, hard-to-heat rooms. Both Winter air-conditioning and hot faucet water (if automatic firing is used) are attractive features. But the cost of installation and upkeep makes this system prohibitive for most families. In general it runs at least 50% more than ordinary heating systems.

HOW TO BUY

WHEN you buy a furnace or a boiler, go to a regular heating contractor rather than to a department store which sells heating equipment as a sideline. Don't rely on information from manufacturers or salesmen; some are reliable but too many will tell you only the things necessary to get you to buy their product.

Homeowners who have been egged into buying certain heating equipment by high-pressure salesmen usually have stock complaints to make.

"After we signed the contract, we never saw the salesman again"; or "The salesman said a lot of things which we later found weren't in the contract"; or "The salesman was supposed to be a heating expert, but when we complained about him the sales manager said that a year ago he was selling vacuum cleaners, and that now he sells shingle roofs."

WILL THIS PLANT WASTE FUEL?

A heating engineer uses a special thermometer to find out if stack temperature is too high.

Anything but the most careful buying may leave you with the wrong type of system for your heating requirements. Wrong buying has forced homeowners, in

Types of Heating Plants

and a check list of their relative merits and uses

TYPE OF SYSTEM	APPROXIMATE FIRST COST	MOST SUITABLE FOR	COMFORT	TYPE OF FIRING BEST ADAPTED TO	REPAIR AND UPKEEP	USES ELECTRICITY	COMMENTS
Pipeless furnaces	Cheapest, $95 without distribution system	4-5 room, smallest compact homes	Poor; drafts, cold floors	Generally fired by hand, with coal	Low	No	Unsatisfactory for most homes. Buy only to cut costs
Gravity warm air furnaces	Low, $150 for 5-room house (including distribution system)	Compact homes with good, high basements	Fair, if rooms heat easily	Fair for gas, stoker, oil burner	Low	No	A "Best Buy" for most small homes which have no hard-to-heat rooms
Forced circulation warm air furnace	Medium to high, $50 to $75 more than for gravity warm air furnace	Best furnace-type system. Often used in better homes	Excellent	Excellent for gas, stoker, oil burner	Medium to high	Yes; $8 to $26 a year	Luxury heat. Winter air conditioning
One-pipe steam boiler	Low to medium, $200 and up	All but smallest 4-5 room homes	Very good	Better with automatic firing than with hand firing	Low	No	A "Best Buy" (if low initial cost is important). Gives hot water at minimum fuel and equipment cost
Two-pipe steam boiler	Medium to high	Larger homes	Very good	Better with automatic firing than with hand firing	Low to medium	No	Once popular for higher priced homes—seldom installed today
Gravity hot water boiler	Medium	Any home—smallest to largest	Excellent	Excellent for both automatic and hand firing	Very low	No	A "Best Buy" for smallest homes. Extra cost over a steam plant is good investment
Forced circulation hot water boiler	Medium to high	Any home—except the smallest	Excellent	Install only for automatic firing	Medium to high	Yes; $15 to $22 a year	Luxury heat. Finest control and comfort at a higher price. Hot water on tap

some cases, to spend half again as much as the initial cost of the plant to make it work right, or to spend $40 a month for oil during the Winter, when $15 was what they had expected to pay.

CU's first and foremost recommendation to consumers is: *find out what your heating requirements are, ask for guarantees of good performance, and then get those guarantees in writing from your contractor.*

In August 1936, CU pioneered by recommending that homeowners buy furnaces and boilers on the basis of stack temperatures. Field tests made on hundreds of boilers and furnaces in typical homes had shown that the majority sold as "highly efficient and economical" were actually extremely wasteful. Many produced stack temperatures as high as 800° to 1,000° and thus allowed an excess of heat to escape through the chimney.

Since that time the stack temperature test (made by inserting a special thermometer into the smokepipe of the heater) has become the standard way for consumers to make sure that new heaters won't waste fuel. The Federal Housing Administration now uses the stack temperature test to certify heaters for FHA homes, requiring a maximum of 600°. Manufacturers who opposed the test when it was first proposed by CU must conform to the requirements if they want FHA orders.

Wise homeowners will imitate the FHA, and obtain a written guarantee from the contractor and manufacturer to the effect that the boiler or furnace they are thinking of buying will run a stack temperature no higher than 600° while carrying its full load. Substitute 500° if you want exceptional economy and can get your contractor to agree to it.

OIL FIRED FURNACES

IF THERE weren't threats ahead of high fuel oil prices and difficulties in obtaining oil in some parts of the country, CU would recommend that homeowners who plan to build small, modern style homes consider the new oil fired furnaces fitted with integral vaporizing-type burners. These provide Winter air-conditioning, and more important, low fuel bills. And the initial cost is, relatively speaking, small.

But in view of present conditions, CU advises homeowners not to buy furnaces or boilers especially designed for oil. Buy, instead, heaters designed for hand fired coal, and, if you wish, have oil burners installed in these later on. Then you can fall back on hand firing or a coal stoker if oil prices advance to a prohibitive level, or if the supply is curtailed in your area.

Kitchen Knives

A good knife will outlast a poor one many times and give better service, CU's tests show. The conclusion: it pays to pay more for good cutlery and take care of it

OUT OF the hundreds of gadgets and implements sold for the kitchen there aren't many that are as useful or as much used as the kitchen knife. There ought to be some good ones around. And so there are, but you won't find many of them in the kitchens of the country. You won't because most kitchen knives are bought off the counters of the five and tens. And tests show most of them to be poor buys.

Unfortunately, the cost of a good kitchen knife may be several times the cost of a bad one. Fortunately, the actual money difference even so is not very great; and a good knife can outlast a bad one many times over. For that and other reasons, the additional outlay is justified. CU's advice is to buy good cutlery and take good care of it.

BLADES

A GOOD blade is the first thing to look for when you're buying a knife. The best blades are *forged*. (i.e., they are shaped from bars of heated steel by hammering, originally by hand, now by machine). They're best for two reasons: (1) forging produces a fine-grained metal which takes and holds a sharp cutting edge, and (2) forging allows the blade to be tapered from handle to point so that the knife has flexibility or "spring."

Blades *stamped* from sheets of steel usually aren't tapered, and so you don't get that spring, though occasionally you can find a stamped blade with some degree of tapering.

If you want to make sure you're buying a knife with a forged blade, look for the thick bolster—that's the part of the blade which joins the handle. But be on guard against knives of inferior quality which are made to look like forged knives through the application of an overlay of metal at the bolster.

Before you buy a knife, test the blade for its "spring," to make sure it's properly tapered. Hold the knife point down on a table and press on the handle. The top third of a good blade will remain rigid: the rest will curve.

All forged blades will stand up under this test, and some good stamped ones may. But an inferior blade will curve in an arc without any rigid section. This type of knife will not cut satisfactorily.

STAINLESS STEEL Stainless steel, an alloy of carbon steel with nickel and chromium, is used for almost all cutlery today. Its advantages are obvious. But unfortunately, in making the steel stain-resistant, other qualities are often sacrificed. The carbon content is usually lowered, so that the metal will not take or hold a sharp edge.

Imported French, English and German stainless steel blades are superior to those of American make. It is impossible, however, to say how long a supply of imported makes will be available, or whether the high quality will be maintained.

At the time of CU's tests, no lowering of quality standards had yet taken place. In view of present conditions, CU advises housewives in the market for a good knife to do their buying soon.

CHROMIUM-PLATING Some American manufacturers are making a chromium-plated knife. This process affords a stain-resistant blade surface, and a sharp, though not stainless, cutting edge of good quality carbon steel. Special care, however, must be taken in sharpening these chromium knives. If the blade above the cutting edge is ground, the plating may be chipped or peeled back, and that ends all resistance to staining.

HANDLES

THOUGH the handle of a knife is less important than the blade, it's harder to judge. In general, good handles go with good blades, and vice versa.

Of the materials from which handles are made—wood, hard rubber, metal or plastics—a hard wood like cocobolo probably gives the best service. Hard rubber tends to break easily. Though

A report on labor conditions in the knife industry appears on page 194.

Correction

IN THE ratings on women's slips in the June issue Radelle Stylefit ($2.98) was mentioned as a "Best Buy" in satin slips. The correct name of this slip is Radelle Sylfit.

plastics are just coming into use, they may prove satisfactory.

When you're buying a knife, be sure that the handle is not so small that your fingers will become cramped when the knife is used for a long period of time. It's a good idea to weigh the knife in your hand to see if the blade and the handle have a comfortable balance.

Notice, too, how the blade is fastened to the handle. Forged blades are usually inserted without the use of rivets. Stamped blades are fastened with two or three rivets which may fall out easily though there's no way of telling whether this will happen. Buying a forged, rivetless knife is the best means of avoiding this.

TREAT THEM GENTLY

THE BEST knife in the world won't stay that way if it isn't given good care. Treat your knives gently, however, and they will give good service for years. Here are some pointers for good cutlery care:

Don't keep knives in a drawer with other kitchen hardware. They lose their sharp edges quickly that way. Get a special knife rack and keep them there.

Never heat a blade in a flame. It will destroy the temper of the metal.

For information on sharpening knives, see the report on home grinding appliances in this issue of the REPORTS.

BUY NOW

BECAUSE general advances in prices on American-made cutlery are likely to take place in the near future, in addition to probable rises in imported cutlery prices, CU recommends buying kitchen knives now if you are going to need them within the year. (See *Bread & Butter*, CU's weekly newsletter, No. 14, May 29.) There are moves on among manufacturers to make substitutions in metals used for rivets, which may result in serious lowering of quality for a given price.

Complicating buying is the great price variation in the retail market, so that the grade of a knife can't be determined by its price. In one case CU investigators discovered a 100% variation in the retail price of a particular brand of knife. The *Universal* "Crobalt" steel knife was purchased for 70¢ in a department store, and for 35¢ in a cutlery establishment.

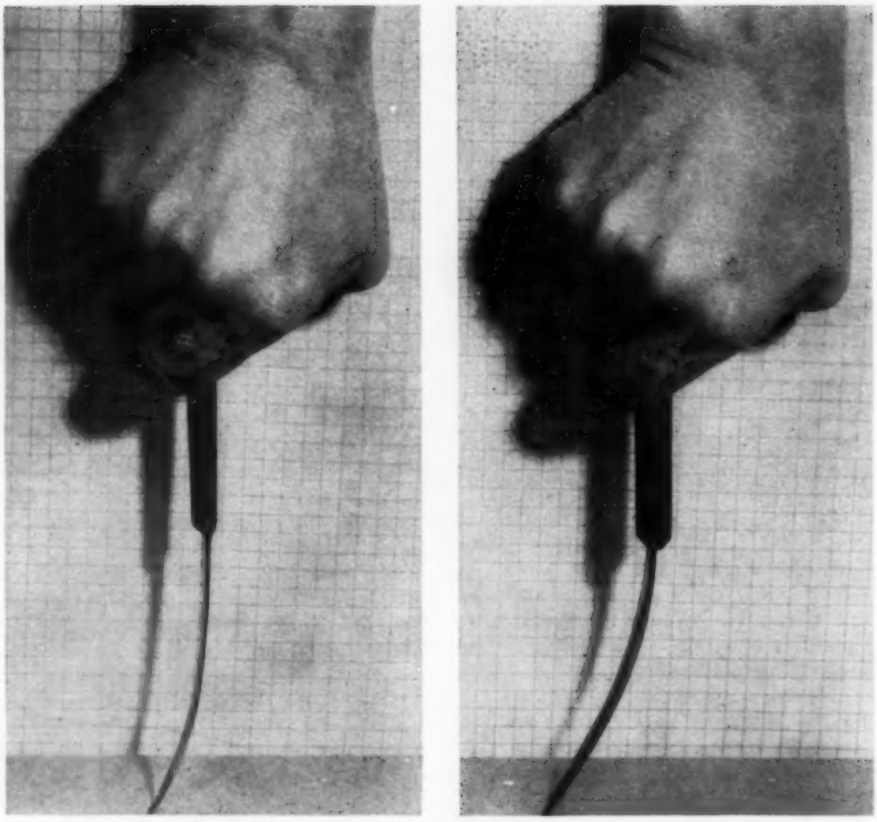
In general, we think, you will find it more profitable to buy knives in special cutlery shops—but shop around if you can spend the time.

HOW THE TESTS WERE MADE

NO STANDARD test methods for knives have been established. The ratings which follow are based on new tests developed in CU's laboratory. At least two samples of each brand were examined.

The tests used were originated by CU technicians after considerable experimentation and were designed to measure both sharpness and resistance to dulling. Results were highly consistent, justifying the conclusions below.

Tests for the most part were conducted on paring knives. In a number of cases, check tests were made on other sizes and the blade quality as determined by the tests was found to be about the same, regardless of size. The ratings apply, therefore, to the brand, rather than to any particular size of knife.



A GOOD BLADE

will do this . . . *. . . not this*

RATINGS

Ratings are in order of quality without regard to price. For comparative purposes, except where otherwise noted, prices are for 3" kitchen knives and are the prices paid for test samples in New York City. They vary greatly from store to store.

Acceptable

(In order of quality without regard to price)

Rushorstain (Robert F. Mosley, Ltd., Sheffield, England). 4" knife, $1.65. A very high quality forged knife of stainless steel. Sharpened to a keen edge and retained it. Very good design and workmanship. Representative of the better grade imported cutlery.

J. A. Henckels (J. A. Henckels, Solingen, Germany). 3⅞" knife, $1.35. A good quality stainless steel knife and, like the *Rushorstain*, representative of good imported cutlery. Not at present being imported but dealers report large stocks on hand. Knives are now being made in this country under the J. A. Henckels name but the domestic product is inferior to the German (see rating below). Both products are stamped with the name of the country in which they are made.

Case (W. R. Case & Sons, Bradford, Pa.). 75¢. Chromium-plated blade of high quality. Sharpened and held edge well. Good design and workmanship.

J. A. Henckels "Welcut." 3½" stainless steel knife, 50¢. The trade name "Welcut" is applied to the *Henckels* knife of U. S. manufacture. The knife was of fair quality and took and held a good edge. It was not entirely stainless.

Cattaraugus (Cattaraugus Cutlery Co., Little Valley, N. Y.). Chromium-plated razor type blade in special handle (a very convenient paring knife), 40¢; non-stainless, high carbon steel blade, 30¢. These were good quality knives. Stainless blades of this manufacture inferior to the plated and non-stainless (see rating below).

Universal Crobalt Stainless (Landers, Frary & Clark, New Britain, Conn.). Prices paid for samples varied from 35¢ to 70¢ for the same type 3" knife. Claimed to be "made of a new stainless crobalt steel." Quality of the blade very good for a stainless knife, but hard rubber handle breaks easily.

Sears' Sta-Sharp Cat. No. —9320 (Sears-Roebuck). 49¢. A very good stainless blade in a good plastic handle. One of the few domestic knives that was properly tapered.

Universal Hollow Ground Stainless. (Landers, Frary & Clark). 35¢. A good quality knife. Sharpened and kept an edge fairly well.

Universal Stainless. 25¢. About the same quality steel as in knife listed above except that it was not hollow ground. Hollow grinding adds a little to the ease of sharpening.

Ward's Cat. No. —3389 (Montgomery Ward). 32¢. A good quality hollow ground stainless knife. A good buy.

Cattaraugus (Cattaraugus Cutlery Co.). 30¢. Plain high carbon steel knife. Not stainless.

Kutmaster (Utica Cutlery Co., Utica, N. Y.). 40¢. Medium quality stainless blade.

Sears' Dunlap Cat. No. —9778 (Sears-Roebuck). 19¢. Medium quality stainless blade. Better than others in its price class. A good buy.

Robeson Shuredge Black Hawk (Robeson Cutlery Co., Perry, N. H.). 35¢. "Chrome treated high carbon steel." Stain-resistant but not stainless. A good blade but rubber handle was unsatisfactory.

Cattaraugus "Stainless" (Cattaraugus Cutlery Co.). 25¢. Quality of blade good for a stainless knife.

Russell (Russell Harrington Cutlery Co., Southbridge, Mass.). 30¢. A fair quality stainless knife.

Lamson (Lamson-Goodnow Mfg. Co., Shelburne Falls, Mass.). 45¢. Stainless blade; quality well below others at this price.

Robeson Shuredge Chromium Plated. (Robeson Cutlery Co.). 25¢. Blade fair. Lower quality than the *Robeson Black Hawk*.

Sears' Fulton Cat. No. —9631 (Sears-Roebuck). 13¢. Chrome-plated blade in satisfactory hard rubber handle. A comparatively low quality knife but better than others in this price class.

Not Acceptable

Robeson Shuredge "Stainless" (Robeson Cutlery Co.). 15¢.

The following brands were representative of the cheap cutlery sold in five-and-tens. They are of little value in the kitchen.

Geneva Forge.

Robinson.

Landers.

Knife Sharpeners

Abrasive stones do the best job—if you know how to use them. But a good knife deserves a trip to a professional grinder . . . CU reports on various types of home sharpeners and their uses

A HOME knife sharpener has its place in the kitchen, but there's a limit to its usefulness. Good cutlery—and it pays to buy high quality (see the report on kitchen knives on page 179)—needs good sharpening. And it takes skill to grind knives properly.

So if you have a good knife, take it to a professional grinder. It won't cost more than 25¢, and it will be worth it. With a good edge once ground into the blade, you can keep it sharp for a long time by occasionally whetting it against a butcher's steel or a hand stone.

Poor quality knives, on the other hand, won't hold an edge long enough to make it worthwhile to have them ground by an expert. You can keep a fairly good edge on them with a grinding wheel or a disc sharpener, though this edge will probably have to be put on frequently, perhaps even in the middle of a cutting job.

ABRASIVE STONES

HAND abrasive stones are among the most useful devices for keeping kitchen cutlery in good condition. If you understand the technique (below are some pointers) you can, with only occasional use, keep a keen edge on good pieces of cutlery, which have been professionally ground. If you possess patience and considerable skill, you can even put a fresh edge on blades. Poor quality blades, however, require a fresh edge so often that hand stones are of little value, unless you don't mind using them frequently.

Most of the abrasives are artificial stones, made of either silicon carbide or aluminum oxide, and are sold under trade names such as "Carborundum," "Crystolon," or "Alundum." They are much harder than natural stones.

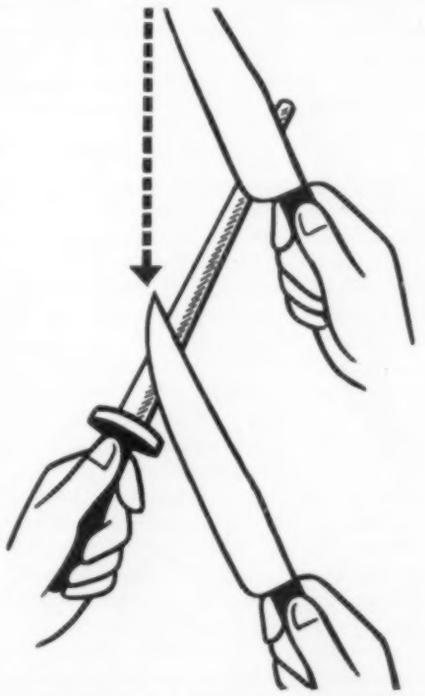
The abrasives come in various sizes, shapes and textures, and the way you use them differs. With some you hold the knife-blade stationary and rub the stone against it. With others you stroke the blade against the stone.

TECHNIQUE—The type of stone shown in figure X (p. 182) is effective for sharpening highly polished blades without marring the finish. To use it, hold the knife in your left hand and with your right hand apply the stone to the cutting edge of the blade. Use file-like motions along the entire length of the blade, first on one side and then on the other.

The stone shown in figure Y is used in the same manner as a butcher's steel but, since it is harder and coarser, it produces an edge more quickly. To use it, hold the stone in your left hand and place the blade against it with your right hand, so that the back of the blade is slightly lifted to give the proper angle on the cutting edge. Draw the blade from the point to the handle of the stone, first on one side, then on the other. Start each stroke at the heel of the blade and, sweeping down diagonally, cover the entire length of the blade from heel to point in each stroke.

The stone shown in figure Z is an ordinary flat stone, perhaps the most common sharpening device. Any type of knife can be sharpened on this stone, although it's difficult to keep from marring the finish on a highly polished knife.

To use this stone, place the heel of the knife-blade at the lower left corner of the stone with the cutting edge away from you and the knife-back slightly

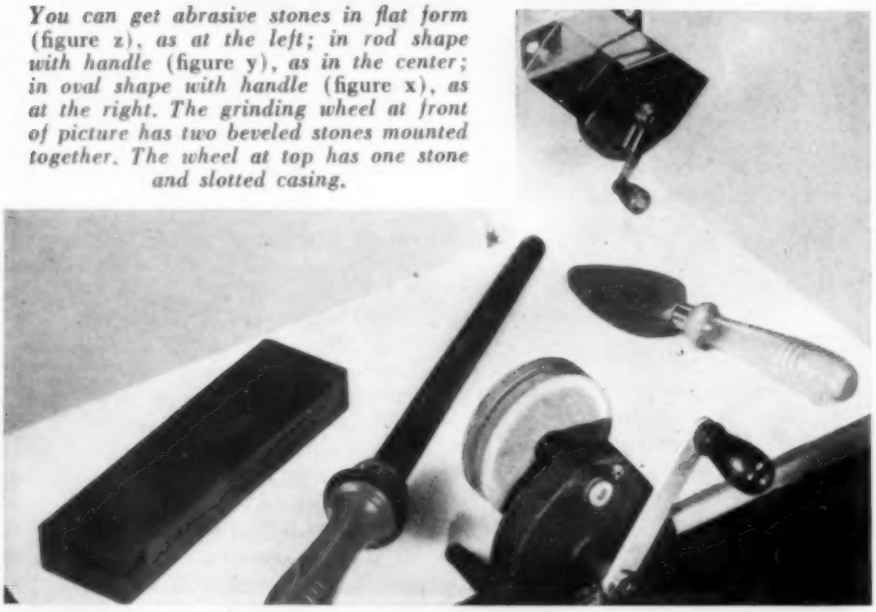


TO USE A ROD SHARPENER

. . . draw the blade (edge first) from point to handle

FIVE KINDS OF ABRASIVE STONE SHARPENERS

You can get abrasive stones in flat form (figure z), *as at the left; in rod shape with handle* (figure y), *as in the center; in oval shape with handle* (figure x), *as at the right. The grinding wheel at front of picture has two beveled stones mounted together. The wheel at top has one stone and slotted casing.*



raised. Hold the knife-handle in your right hand and use the fingers of your left hand to guide and exert pressure on the blade. Push the blade from left to right across the stone so that its path forms an arc.

Then turn the knife over and repeat the movement from right to left.

If an oil stone is used, put a few drops of oil on it before you begin sharpening. If a plain stone is used, moisten it with water.

Butcher's steels, because they are softer and finer than stones, sharpen much more slowly. They should be used only to put the last touch of keenness to a blade which is already sharp.

DISCS & GRINDING WHEELS

Disc sharpeners and grinding wheels are useful for grinding fresh edges on blades because their construction is such that, for most blades, they produce the proper bevel. On cheap blades, however, these sharpeners are apt to produce a wire edge. That can be removed by running the blade across a piece of wood.

The disc sharpener is the most popular and easiest to use. It has a series of steel discs set on either side of a groove through which the knife is drawn at right angles to the discs. CU technicians found that an appliance of this type does a fairly good sharpening job, but removes an excessive amount of steel from the blade in the process.

In view of this we say: don't use a disc sharpener on a knife with a fine quality blade. It will shorten the life of the knife considerably. And don't use this type of sharpener on hollow ground blades, either. The thin, concave cutting edge won't stand up under the treatment; it may chip badly.

If you possess the necessary skill, you can use one of the small grinding wheels on the market to advantage. They put good edges on cutlery, and aren't so likely to spoil the blade.

The wheels come in two types. One type consists of two beveled stones mounted together so that the edges form a v-shaped slot in which the knife is held while being ground. In the other type the grinding wheel is inside a metal casing. Slots in the casing on either side of the wheel hold the knife at an angle against the wheel to produce the proper bevel on the blade.

DISC TYPE

Acceptable

(In order of quality)

Edlund (Edlund Co., Burlington, Vt.). 50¢. Consists of a pair of discs mounted to form a v-shaped slot through which knife is drawn. Convenient to use; does not sharpen as rapidly as some of the others, but amount of metal removed is less excessive. Difficult for left-handed person to use.

Monarch (manufacturer not known). 50¢. This is a variation of the disc type. Consists of steel rods set in shape of V through which knife is drawn.

Eversharp (E. W. Carpenter Mfg. Co., Bridgeport, Conn.). With handle, 29¢; without handle (for fastening on wall), 10¢. This and the *Ace* sharpener below are the most effective of the disc sharpeners, although they do remove an excessive amount of metal from the knife.

Ace (Ace Hardware Mfg. Co., Philadelphia). 39¢. Quality about the same as that of *Eversharp* above. No reason for higher price.

Not Acceptable

A & J (A & J Kitchen Tool Co., Chicago). 10¢ in Woolworth stores. Consists of only one disc over which the knife is drawn through slots in a metal covering.

GRINDERS

Ratings are in approximate order of quality based on construction, ease of manipulation and sharpening effectiveness.

Acceptable

Dazey (Dazey Churn Mfg. Co., St. Louis, Mo.). $1.59. While the construction of this grinder is not quite so sturdy as that of the *Ward's* and *Vindex* listed below, it is much easier to manipulate and does a better sharpening job. Frame and gear housing is cast aluminum.[1] Extra grinding wheels available from manufacturer at 50¢. Fits into wall bracket which holds other *Dazey* kitchen utensils (can opener, fruit juicer) and may be readily removed when not in use.

Vindex (National Sewing Machine Co., Belvidere, Ill.). $1.60. Same type as *Dazey*. It is of much better construction but design features are such that it is not so easy to operate. It does, however, do a satisfactory job of sharpening. Frame and gear housing is a die casting.

Ward's Cat. No. —2023 (Montgomery Ward). 85¢ plus postage. Identical with the Vindex except for poorer paint finish. Undoubtedly made by same manufacturer.

Wulff (Wulff Mfg. Co., Chicago). $1 plus postage. Probably available only by mail order from manufacturer since it was not found in any retail stores. Consists of a single stone with slots in a metal covering in which knife is held. Design is excellent but construction is not sturdy. Does a good sharpening job.

HAND ABRASIVE STONES

Most of these are the products of two large manufacturers of abrasives.

The silicon carbide product of the Carborundum Co. at Niagara Falls is known by the trade name of ***Carborundum***; that of Behr-Manning Co., of Troy, N. Y., is known as ***Crystolon.*** A hand sharpener of the type shown in figure X retails for 35¢ in each case and they are equally good. The type shown in figure Y costs 50¢.

[1] This brand and the *Vindex* are die castings. Because of increasing government restrictions on die castings this type may not be on the market long.

The Place for a Portable

. . . is not your living room. For a portable radio's chief virtue is its portability, not its quality as a radio set. But some are better than others

IF YOU'RE looking for a portable radio to take into the wide open spaces this Summer, you ought to be able to find one which will give good service. But don't let enthusiastic advertising claims or sales talk persuade you that you're getting an all-purpose radio when you buy the average portable. Most portables, plugged into electric lines, don't make good substitutes for regular small home radios. They lack the necessary volume and tone quality. And they definitely aren't a good substitute for auto radios.

Several portable brands, however—*Emerson*, *Garod*, Allied's *Knight*, *Lafayette*, *Majestic*—stand up well in comparison with regular small home radios. This is because of a special tube which furnishes extra power to the loudspeaker when the portable is operating with electric current.

But, in general, CU recommends that you buy a portable only if you want to use it in places where portability is at a premium—on picnics, on hikes, and at the seashore. For home or auto use, stick to types that use electric current to the best advantage.

"PERSONAL" PORTABLES

SINCE CU reported on RCA's "personal" portable last August, a number of other manufacturers have put similar radios on the market. Most of these are extra-small, extra-light camera-type models which can be carried easily in your hand or, if fitted with a leather strap, slung over your shoulder.

The "personals" carry the advantages of portability to their extreme limits. If you yearn to maintain communication with the world during walks in the country, they're handy gadgets. But they have even less volume and poorer tone quality than the standard portables.

This season's "personal" models come in various sizes ranging from the *Emerson* Model 432, which measures 4¼" x 8½" x 2¼" to the large *Fada* Model 34, which is 7½" x 6" x 4". They weigh anywhere from 3¼ to 6½ lbs.

The larger models, for the most part, have "three-way" operation—that is, they can be run on their own batteries, or can be plugged into either a-c or d-c house current. The smaller models operate only on battery current. If you don't intend to run your portable with electric current, there's no point in getting a "three-way" model.

Most of the "personal" models contain some device to minimize the possibility of leaving the radio turned on when it's not being played, or of allowing it to run on its own batteries when it's connected to electric current.

One of these devices is a cover which must be raised in order to turn on the radio. Another is a prominently displayed lever to switch the radio from battery to electric current. The safest arrangement for this purpose, probably, is an "automatic" switch: the change can be made only by removing the plug from the electric outlet and inserting it into a special outlet in the back of the radio.

STORAGE CELL MODEL

SOMETHING new in this season's line of portable radios is *General Electric* Model LB502 which operates on a storage cell instead of dry batteries. (See picture.) With this model, you don't have to buy new batteries when the old ones become exhausted.

Instead you can recharge the storage cell from your car battery (if the car battery can take the extra drain) or from an a-c house current by simply letting the radio play on this type of current (d-c house current won't do the trick). The cell requires recharging after about 15 playing hours.

This model has several advantages. For one, performance is uniform. There's no tendency, as with standard portables, for tone and volume to get progressively worse as the batteries get weaker. And the storage cell, though the initial cost is somewhat higher than that of dry batteries, gives much longer service, since it can be repeatedly recharged.

A possible disadvantage of this model is the inclusion of a vibrator. Since the vibrator is just what its name implies, it produces a gentle vibration, which is noticeable when you touch the radio.

While the vibration didn't interfere with the reception or tone in the sample which was tested, it is fully possible that with continued use the vibration might grow noisy, or the vibrator might itself get out of order. Only experience can show whether the model is practical for general use.

SHOCK HAZARD Most of the portable radios tested had extreme shock hazard at points within the case when the radio was operating on house current. Consequently, CU reminds you that it is most important to remove the electric plug from the socket before changing the batteries or testing the tubes or venturing inside the case.

BUYING HINTS

THERE are several things to look for when you're buying a portable radio. One of these is "vernier tuning," which means simply that there's a speed reduction gear between the tuning knob and the dial pointer. If the gear isn't present, the smallest movement of the knob will tune out the station. In the ratings below, lack of this equipment was described as "difficult tuning."

Make sure that the batteries and tubes are easily accessible. If they're located so that you can replace the batteries and test the tubes yourself, you won't have to rely so much on a radio serviceman. And look critically at radios, such as the *Philco* Model PT-89, which use a special single battery pack containing both "A" and "B" batteries.

Though this arrangement makes changing batteries an even easier and simpler process, it means a waste of money, for the entire pack must be replaced when either battery fails, even though the other one may still be good.

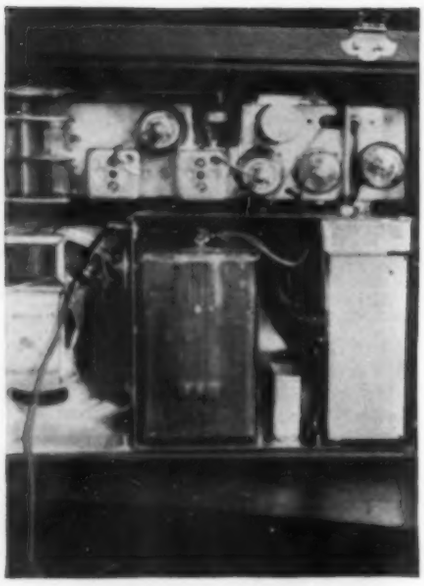
HOW CU TESTED

THIRTY-NINE models of portable radios were tested in CU's laboratories. In the ratings, highest credit was given for undistorted volume and for sensitivity.

Besides this, technicians based the ratings on tone and automatic volume control, ability to eliminate the next station on the dial (selectivity) as well as interfering telegraph signals and tuning whistles ("birdies"). Provision for an external antenna was also taken into consideration.

Where any of the above items is not mentioned in the ratings, you can assume that the ability of the radio in that respect was average. In addition to these important questions of performance account was taken of various features of construction and convenience. Although there should be no variation from sample to sample of one model in design or general performance, there will be more or less variation in quality, depending on the individual manufacturer's care in maintaining quality of workmanship and in inspection. Buy one of the models high on the list, and check it carefully to see that it's in good working condition.

A report on labor conditions in the radio industry appears on page 194.



SOMETHING NEW

This General Electric portable has a storage cell which can be recharged (dark case in center of radio)

PORTABLES

Best Buys

The following portable radios of the "Also Acceptable" list are judged to offer the most value for the money, in the order given. See listing below for full details:

Emerson Model 427. $19.95, list.
Motorola Model 61-L. $21.95, list.
Ward's Airline Cat. No.—672E. $19.95 plus transportation.
Sears' Silvertone Cat. No.—6561. $19.95 plus transportation.
Admiral Model 78-P6. $24.95, list.
Emerson Model 424. $24.95, list.
Knight Cat. No. 17109. $23.95.

Acceptable

(In order of quality without regard to price)

The following eight radios were judged to rank close together in quality.

Pilot Model T-186 (Pilot Radio Corp., Long Island City, N. Y.). $39.95, list. Heavy portable in brownish airplane luggage case. Battery-house current switch on front panel. Excellent volume and selectivity. Short wave band. Provision for external antenna. Tubes inaccessible. Excellent workmanship. Very slight shock hazard at external antenna and ground screw terminals.

Admiral Model 78-P6 (Continental Radio & Television Corp., Chicago). $24.95, list. Two-tone brown leatherette case with brass fittings. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. Tone somewhat boomy. "Birdie" elimination excellent. Provision for external antenna. Tubes inaccessible.

Emerson Model 424 (Emerson Radio & Phonograph Corp., NYC). $24.95, list. Two-tone leatherette case. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. Sensitivity, "birdie" elimination and telegraph signal elimination excellent. Special midget radio loudspeaker tube used on house current operation but volume, although improved, is not exceptionally good. Provision for external antenna. Tubes hard to get at.

Motorola Model 61-L (Galvin Mfg. Corp., Chicago). $21.95, list. Small portable in brown airplane luggage case. Ingeniously arranged cover containing loop antenna can be used in front of or behind the radio, or as an external loop for which a special cable is available. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. Volume, and "birdie" elimination excellent. Tubes inaccessible. Slight shock hazard at door hinges.

Emerson Model 427. $19.95, list. Brown leatherette case. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. "Birdie" elimination excellent. Excellent sensitivity and volume on house current operation because of special tube. Provision for external antenna. Tubes hard to get at.

Lafayette Model C-125 (sold only by Lafayette Radio Corp., NYC). $26.95, net. Large portable in brown leatherette case. Battery-house current switch on front panel. No provision for indicating when radio is turned on under battery operation. Poor "birdie" elimination. Excellent volume on a-c because of midget radio loudspeaker tube. Medium and short wave bands. Provision for external antenna. Receptacle in back for plugging in earphones.

Garod Model BP-308 (Garod Radio Corp., Brooklyn, N. Y.). $42.50, list. Not tested, but identical to *Lafayette* C-125.

General Electric Model LB-530 (General Electric Co., Bridgeport, Conn.). $39.50, list. Tall portable in brown leatherette case with brass. Operates on a non-spill storage battery rather than dry "A" and "B" batteries. (See picture. The battery is the *Willard Radio* –20–2 listing at $8.95 and is included in the above price). Sample tested had excessive play in the dial pointer. Sensitivity and automatic volume control excellent. Tone muffled. Plug-in external loop included. To check the condition of the storage battery, one must open the back cover. Slight shock hazard at screw heads on front panel.

The following five radios were judged to rank close together in quality:

Knight Cat. No.—17109 (sold only by Allied Radio Corp., Chicago). $23.95, net. Poorly constructed ivory and brown leatherette case. Battery-house current switch in back. Excellent "birdie" elimination. Excellent sensitivity and volume on a-c because of special midget radio loudspeaker tube. Provision for external antenna. Short wave band. Tubes hard to get at. Slight shock hazard at external ground screw terminal.

Andrea Model 6G61 (Andrea Radio Corp., Woodside, L. I.). $29.95, list. Brown airplane luggage case. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. Poor telegraph signal elimination. Provision for external antenna. Long battery life. Tubes inaccessible. Slight shock hazard at external antenna screw terminal.

Sears' Silvertone Cat. No.—6561 (Sears-Roebuck). $19.95 plus transportation. Tall and heavy portable in brown airplane luggage case. Appearance excellent. To change from house current to battery operation, plug must be removed from outlet and inserted into a special plug in back of radio. No provision for indicating when radio is turned on. Volume excellent. Automatic volume control and "birdie" elimination poor. Provision for external antenna. Tubes inaccessible. Excellent workmanship. Slight shock hazard at external antenna clip.

Emerson Model 428. $29.95, list. Two-tone brown leatherette case. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. Special midget radio loudspeaker tube used on house current operation but volume, although improved, is not exceptionally good. Provision for external antenna. Tubes hard to get at.

Philco Model T843 (Philco Radio & Television Corp., Philadelphia). $35, list. Large, heavy tan leatherette portable. Removable front cover. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet in back of radio. No provision for indicating when radio is turned on. Sensitivity excellent. "Birdie" elimination poor. External plug-in loop available. Excellent workmanship.

The following two radios were judged to rank close together:

Sentinel Model 217-P (Electrical Research Laboratories, Inc., Evanston, Ill.). $34.95, list. Large, heavy portable in brown leatherette case. Battery-house current switch on front panel. Tone, "birdie" elimination and telegraph signal elimination excellent. Provision for external antenna. Tubes inaccessible.

Sentinel Model 231. $39.95, list. Large portable in brown leatherette case. Battery-house current switch on front panel. "Birdie" elimination poor. Provision for external antenna. Short wave band. Radio received in inoperative condition and after correction of the trouble, remained dead on part of band. There was a long whine on warming up. Very slight shock hazard at antenna and ground screw terminals.

The following five radios were judged to be somewhat lower in quality than the two above:

Ward's Airline Cat. No.—672 E (Montgomery Ward). $19.95 plus transportation. Heavy portable in blue airplane luggage case. Battery-house current switch on front panel. Poor automatic volume control, "birdie" elimination and telegraph signal elimination. Did not cover entire broadcast band. Provision for external antenna. Sample tested was delivered with pilot light socket and one tube loose.

Andrea Model 6G63A. $44.95, list. Alligator leatherette case. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet at back of radio. No provision for indicating when radio is turned on. Poor volume and "birdie" elimination. Hank antenna included. Provision for attaching external antenna. Tubes inaccessible. Extreme shock hazard at band switch lever and plate; slight shock hazard at external antenna screw terminal.

Zenith Model 6G601M (Zenith Radio Corp., Chicago). $29.95, list. Heavy portable in two-tone brown leatherette case with brass corners. Detachable, gaudy loop with cable for external operation. To change from house current to battery operation, plug must be removed from outlet and inserted into special outlet at back of radio. Telegraph signal rejection excellent. Provision for external antenna. Short battery life and undesirable battery pack. (See comment under *Philco* Model PT-89 below). Slight shock hazard at screw heads on each side of the radio. Earphone adaptor available.

RCA Model 25-BP (RCA Mfg. Co., Inc., Camden, N. J.). $24.95, list. Lightweight portable in brown leatherette case. Battery-house current switch on front panel. Poor volume and "birdie" elimination. Provision for external antenna, in form of flimsy pigtails hidden behind rear cover. Tubes inaccessible. Batteries fit too tightly. Poor workmanship.

Philco Model PT-88. $25, list. Small, light portable in brown leatherette case. To change from house current to battery operation, plug must be removed from outlet and inserted into a special outlet in back of radio. No provision for indicating when radio is turned on. Sensitivity, automatic volume control, selectivity and "birdie" elimination poor. Provision for external antenna. External plug-in loop available. Long battery life, but undesirable battery pack (see comment under *Philco* Model PT-89 below).

"PERSONALS"

The following "personal" portables of the "Also Acceptable" list are judged to offer the most value for the money in the order given. See listing below for full details:

Best Buys

Knight Cat. No. 17131. $9.95. (Battery operation only.)

Lafayette Cat. No. EB-164. $9.95. (Battery operation only.)

Lafayette Cat. No. JS-114-BI and *Knight* Cat. No. 17108. $13.75. (Battery operation only.)

Sentinel Model 227. $16.95, list. (Battery operation only.)

Zenith Model 4K600. $19.95, list. (Battery operation only.)

Firestone Cat. No. S7397-1. $19.69. (Three-way operation.)

Fada Model C34. $19.95, list. (Three-way operation.)

Acceptable

(In order of quality without regard to price)

The following radio was judged to be outstanding in quality:

Zenith Model 4K600 (Zenith Radio Corp., Chicago). $19.95, list. Black metal and nickel case. Battery operation only. Excellent sensitivity and volume. Shoulder carrying strap and carrying case available.

The following five radios were judged to rank close together in quality:

Firestone Cat. No. S7397-1 (sold by stores of Firestone Tire & Rubber Co., Akron, Ohio). $17.95 plus $1.74 for batteries, total $19.69, net. Three-way operation. Maroon plastic and leatherette case. No provision for indicating when radio is turned on. Better than average "birdie" elimination. External plug-in loop available at $1.39, net. Uses five small flashlight batteries which are expensive to replace. Flashlight battery cover can be placed in such a way as to short-circuit four of them. Shock hazard from chassis.

Fada Model C 34 (Fada Radio & Electric Co., Inc., Long Island City, N. Y.). $19.95, list. Large and heavy. Three-way operation. Black leatherette case. Battery-house current switch in back inconvenient. Tuning difficult. Sensitivity and volume better than average. Telegraph signal elimination poor.

Sentinel Model 227 (Electrical Research Laboratories, Inc., Evanston, Ill.). $16.95, list. Flimsy brown plastic and leatherette case. Battery operation only. No provision for indicating when radio is turned on. Better than average volume. Poor automatic volume control. Tubes inaccessible.

RCA Model BP-10 (RCA Mfg. Co., Inc., Camden, N. J.). $20, list, including "genuine leather" carrying case. Lightweight, black metal and chromium case. Battery operation only. This is the original "personal" radio. Tuning difficult. Automatic volume control and selectivity better than average. Only one flashlight cell which necessitates frequent replacements. The sample tested was one equipped with a round loudspeaker. RCA is now producing this model with an elliptical loudspeaker. One of these was tested under the Westinghouse brand name below.

Westinghouse Model WR-682A (Westinghouse Electric Supply Co., NYC). $20, list. Apparently identical with *RCA* Model BP-10. Black metal and chromium case. Battery operation only. Tuning difficult. Automatic volume control, selectivity and "birdie" elimination better than average. Single flashlight cell which necessitates frequent replacement. Model tested had oval speaker.

The following nine radios were judged to be close in quality:

Motorola Model 3A5 (Galvin Mfg. Corp., Chicago). $24.95, list. Three-way operation. Maroon and chrome metal case. To change from house current to battery operation, plug must be removed from the electric outlet and inserted into a special outlet in back of radio. Tuning somewhat difficult. "Birdie" elimination better than average. Tubes inaccessible. No shock hazard. Sample tested would not operate with volume control fully on.

Motorola Model A-1. $19.95, list. Maroon and chrome metal case. Battery operation only. Tuning somewhat difficult. Automatic volume control and "birdie" elimination better than average. Tubes inaccessible. Workmanship excellent.

Farnsworth Model CT-59 (Farnsworth Television & Radio Corp., Marion, Ind.). $19.95, list. Three-way operation. Flimsy brown plastic and leatherette case. Similar in appearance to *Sentinel* below. No provision for indicating when the radio is turned on. Tuning difficult because of play in the tuning knob.

Sentinel Model 247. $21.95, list. Three-way operation. Flimsy brown plastic and leatherette case. No provision for indicating when radio is turned on. Sensitivity, volume and volume control poor. Did not cover entire broadcast band. External plug-in loop available. Tubes inaccessible. Slight shock hazard at front-door hinges.

Lafayette Cat. No. JS-114-BI (sold only by Lafayette Radio Corp., NYC). $13.75 plus postage if ordered by mail. Brown and ivory leatherette case. Battery operation only. Apparently identical with Allied's *Knight* Cat. No. 17107 except for color. Knobs too small, making tuning somewhat awkward. Short battery life. Tubes inaccessible. This radio was received in an inoperative condition.

General Electric Model LB-502 (General Electric Co., Bridgeport, Conn.). $22.95, list. Three-way operation. Flimsy blue plastic case. Similar in appearance to *Sentinel* above. No provision for indicating when the radio is turned on. Poor tone. Did not cover entire broadcast band. External plug-in loop available. Tubes inaccessible. Some shock hazard at front door hinges.

Emerson Model 432 (Emerson Radio & Phonograph Corp., NYC). $19.95, list. Black plastic case. Battery operation only. Smallest size and weight of all radios tested. Tuning difficult. Poor tone. Better than average automatic volume control. Poor telegraph signal elimination and selectivity. Short battery life. Single flashlight cell which necessitates frequent replacement.

Knight Cat. No. 17108 (sold only by Allied Radio Corp., Chicago). $13.75, plus postage if ordered by mail. Black leather-

ette case. Battery operation only. Tuning somewhat difficult. Poor tone. Better than average "birdie" elimination. Short battery life. Apparently identical with *Lafayette* JS-114-BI except for color. Tubes inaccessible.

Knight Cat. No. —17131 (sold only by Allied). $9.95, plus postage if ordered by mail. Black plastic case. Battery operation only. No provision for indicating when the radio is turned on. Tuning difficult. "B" battery and plug not standard. Long battery life. Receptacles for plugging in earphones. Police band. Shoulder carrying strap available.

The following five radios were judged to be lower in quality than those above:

Lafayette Cat. No. EB-164 (sold only by Lafayette). $9.95, plus postage if ordered by mail. Brown leatherette case. Battery operation only. Tuning very difficult. Single flashlight battery requires replacement every few days. Batteries hard to get at. Tubes inaccessible.

Philco Model PT-89 (Philco Radio & Television Corp., Philadelphia). $16.95, list. Flimsy brown plastic case. Battery operation only. Adjustable shoulder carrying strap which serves as loop antenna. Tuning difficult. With carrying strap adjusted to minimum length, sensitivity was poor. Telegraph signal rejection poor. Used a special battery pack rather than separate "A" and "B" batteries. Such practice is considered uneconomical in that the entire pack must be replaced when *either* "A" or "B" battery fails.

De Wald Model 410A (De Wald Radio Mfg. Corp., NYC). $19.95, list. Brown leatherette case. Battery operation only. No provision for indicating when the radio is turned on. Tuning very difficult. Poor tone. Tubes inaccessible.

Garod Model BP-20 (Garod Radio Corp., Brooklyn, N. Y.). $24.95, list. Large and heavy. Three-way operation. Two-tone brown leatherette case. Tuning somewhat awkward. Poor sensitivity, tone and automatic volume control. Batteries somewhat hard to get at. Tubes inaccessible. Some shock hazard from the whole front panel and a screw head outside the case.

Detrola Model 378 (Detrola Corp., Detroit). $19.95, list. Three-way operation. Flimsy tan plastic case. No provision for indicating when the radio is turned on. Tuning very difficult. Poor sensitivity and selectivity. Low volume. Tubes inaccessible. Shock hazard at door hinges.

Batteries for Your Portable

WHEN you buy a portable radio, you usually have to take whatever brand of batteries the manufacturer or distributor has put in the set. The only thing you can do—and it's important if you want to avoid stale cells—is to make sure the batteries haven't passed the expiration date marked on them.

When the original batteries are used up, however, you have a choice of several brands. All of them sell for about the same price, but CU tests show that they're vastly different in quality.

Every radio operating on batteries requires two types of cells—an "A" battery to furnish low voltage and a "B" battery to supply high voltage. From the many types of "A" and "B" batteries on the market CU selected one type of the "A" and two of the "B" for testing. The "A" battery was a 1½ volt cell measuring 2¾" x 2¾" x 4" and weighing 1¼ lbs.

Both types of "B" batteries were of 45 volts. One was the standard full-sized model measuring 2½" x 4" x 5¼" and weighing 2 lbs., 10 oz. The other was a half-sized model measuring 1¾" x 3½" x 5½" and weighing 1 lb., 10 oz.

In general, the half-sized models didn't begin to equal the larger batteries in lasting quality. There was one exception: the little *Eveready Mini-Max* No. 482 outlasted all the half-size and most of the full-size batteries.

While no radio performance tests were made at this time on flashlight batteries—the type used in "personal" portables—a report on flashlight batteries appeared in the March 1941 REPORTS. The tests then showed that the "Best Buy" was *Sears' Shurlite* Cat. No.—4654 at 4¢, plus transportation, and the highest quality batteries were *Sears' Powermaster Armor-Clad* Cat. No.—4650, 9¢ plus transportation, *Ward's Leak-Proof* Cat. No.—4728, 9¢ plus transportation, and *Ray-O-Vac Leak-Proof* No. 2LP at about 10¢. The *Eveready Mini-Max* No. 467 "B" battery, which is almost universally used in "personal" portables, lists at $2.25 and is available at Lafayette for $1.75 plus transportation if ordered by mail.

The ratings of standard batteries below were based mainly on the number of hours the cells lasted while discharging four hours a day for five days a week. Other considerations were weight, size, and average voltage during life. Two samples of each battery listed were tested.

"B" BATTERIES

Acceptable

(In order of quality without regard to size, weight, or price)

EXCELLENT

Ward's Supreme Quality Cat. No.—4949 (Montgomery Ward). $1.15 plus transportation. Full size.

Eveready No. 762 (National Carbon Co., NYC). $1.50, list. Full size.

Eveready Mini-Max No. 482. $1.50, list. Half size, but outlasted all batteries following. Available at $1.05 (plus transportation if ordered by mail) at Lafayette Radio Corp., NYC.

Sears' Silvertone Cat. No.—5090 (Sears-Roebuck). $1.19 plus transportation. Full size.

GOOD

Burgess No. B30 (Burgess Battery Co., Freeport, Ill.). $1.50, list. Full size. Available at $1.05 at Lafayette Radio Corp., NYC or Allied Radio Corp., Chicago.

Usalite No. 624 (United States Electric Mfg. Corp., NYC). $1.50, list. Full size.

Burgess No. M30. $1.50, list. Half size. Available at $1.05 at Lafayette Radio Corp. or Allied Radio Corp.

FAIR

Usalite No. 640. $1.50, list. Half size.

Sears' Silvertone Cat. No.—5079. $1.19 plus transportation. Half size.

Not Acceptable

The following batteries are rated "Not Acceptable" because they did not carry a guarantee date:

Ray-O-Vac No. P5303 (Ray-O-Vac Co., Madison, Wis.). $1.50, list. Full size. About equivalent in quality to ***Sears' Silvertone*** Cat. No.—5090.

Ray-O-Vac No. P5S30 (subsequently replaced by P7830). $1.50, list. Half size. About equivalent in quality to ***Usalite*** No. 640.

"A" BATTERIES

Acceptable

(In order of quality without regard to size, weight or price)

EXCELLENT

Sears' Silvertone Cat No.—5089 (Sears-Roebuck). 37¢ plus transportation.

Ward's Supreme Quality Cat. No. —5021 (Montgomery Ward). 36¢ plus transportation.

GOOD

Eveready No. 742 (National Carbon Co., NYC). 55¢, list.

FAIR

Burgess No. 4F (Burgess Battery Co.). 50¢, list. Available at 35¢ at Lafayette Radio Corp. or Allied Radio Corp.

Usalite No. 634 (United States Electric Mfg. Corp.). 55¢, list.

Not Acceptable

The following battery is rated "Not Acceptable" because it did not carry a guarantee date:

Ray-O-Vac No. P94A (Ray-O-Vac Co.). 55¢, list. Quality mid-way between ***Sears'*** and ***Ward's.***

Fabric Finishes

CU presents—for your guidance in buying—a round-up of information on new finishing treatments for textiles. Most of these processes represent important advances; all are still in the experimental stage; none is infallible

WHEN Grandma was a young girl, she didn't have much trouble selecting a fabric from the available stock at the dry goods store. There weren't so many kinds of fabric and, most important, there wasn't anything really new. Perhaps it was polka dots this year instead of stripes, but the basic cottons, linens, silks and woolens had been there last year—and the year before.

Grandma's granddaughter has no such easy job.

She has, for one thing, a host of new fabrics to delight her eye and complicate her choice. Besides the natural fibers, she now has the synthetics like rayon, nylon and vinyon, and only the limitations of human ingenuity can determine how many others will greet her in the near future. And these newcomers often command the center of attention. They're good mixers; they crop up everywhere in the most bewildering combinations.

It's difficult even for a textile technician to look at some of the fabrics and say what they're made of, or how they'll wear.

As revolutionary as the new fibers themselves has been the development of a myriad of treatments known as "finishing agents," which have special effects on the fabric or fiber to which they are applied. By means of these finishes, the basic nature of fabrics can be changed radically.

Linen, which has an innate tendency to crease badly, can be made crease-resistant; fabrics which have a strong desire to shrink can be treated to resist shrinkage. By using special finishing agents fabrics can be made pliable or stiff, soft or hard, springy or limp, rough or smooth.

All of these developments are evidence of great technological advances in the textile industry. If honestly promoted and merchandised, they can point the way to important improvements in fabrics of all types, with increased serviceability and satisfaction to the consumer.

TWO STEPS FORWARD, ONE BACK

UNFORTUNATELY, however, all is not what it should be; most of the time progress is not steady, but matches two steps forward with one step back.

Hosiery is made snag-resistant and serviceable to a degree—enough to beat out a competitor but not enough to give the consumer as much wear as is possible from the technological standpoint. Finishes are often applied to fabrics which, in themselves, do not have the necessary minimum of serviceability—too much reliance is placed on the finish, not enough on the fabric itself.

And in their haste to get their product on the market, some manufacturers of finishing compounds have not devoted sufficient time to ironing out the bugs that infest any new development. As a result, there have been a number of interesting and occasionally unpleasant consequences.

Velvets are by nature very delicate fabrics; and when a "crush-resistant" finish was first announced for them, it was welcomed with open arms by the trade. Quantities of the fabric were treated and sold over the counter or made up into garments.

True enough, the fabric was crush-resistant. But after a time an odor akin to that of dead fish pervaded the land, particularly in the vicinity of garments made of these treated fabrics. The research had not gone far enough to find that on storage, particularly in warm damp places, the chemical agents used developed unpleasant odors.

Another example of inadequate research came to light in a finish used for men's shirting fabrics. The finish produced a definite improvement in fabric texture and quality, and was also fairly permanent. Shortly after its introduction, however, complaints began to come in. For no apparent reason, shirts treated with this finish and washed in power laundries were falling apart after ironing. The washing process hadn't been changed, and consequently couldn't be blamed.

Trouble shooting brought out the fact that the particular resin finish used had an affinity for the chlorine in the bleaching compounds used by the laundries. The affinity between the two—the resin and the chlorine—was so great that the chlorine could not be rinsed from the fabric by the normal rinsing treatment.

When the garment was subsequently ironed, the high temperature caused a chemical change which liberated hydrochloric acid. And so the shirts fell apart. The problem was solved, but not until thousands of shirts were ruined.

Another, and more dangerous, result of inadequate research in finishes has been the effect that some of the chemicals have had on the human skin. This has created considerable comment in the medical journals and, to avoid suits for damages, it is probable that finish manufacturers will now make as sure as possible that their compounds do not have an irritating effect on normal skins.

Nevertheless, there are numerous cases on record of skin eruptions which have definitely been traced to the use of a finish which had not been adequately check-tested prior to its introduction.

Despite the mistakes, the new finishes have already brought about marked improvements in the serviceability of fabrics of all types. Spun rayon would be a poor thing without them. Shirts would continue to shrink out of fit. And milady, starting out fresh as a daisy, would still be coming home a mass of wrinkles.

WHAT ARE THEY?

WHAT are these finishes? Some of them are purely mechanical, most of them are chemical. Among the most important of the latter is a large group of what are technically known as "high polymers" (you can call them synthetic resins).

Their importance is that they can penetrate and be absorbed by the textile fiber, to such an extent that the fabric can take up large quantities of the chemical and still look and feel like an ordinary fabric. At the same time they contribute certain definite improvements in wear, texture, &c., depending on the particular type of resin used and how and when it is applied.

These resins are not adulterants in the ordinary sense of the term (like weighting in silk or sizing in cotton); the resins generally cost more than the fiber. They are used to give a particular desired effect, to increase resilience, strength, fullness, firmness, durability, to impart luster or glaze, to shed water or resist fire.

In comparison with the old-time starchy fillers, the new resin finishes last a long time, and some last the life of the fabric. Even so, the common use of the word "permanent" to describe these finishes is often misleading. In this connection the National Retail Dry Goods Association has given retailers the following advice:

> In today's markets permanent finishes hold fast to the fabric as long as the dye. If this is not true (of your particular finish), a statement that it will survive 25 washings in the family washing machine is the kind of information your customers want. Merchandise with a semi-permanent finish that is removed by the first cleaning or power laundering, or trip to the washing machine, but will last six times if hand-washed with care—should not be classed as washable merchandise.

Calling a finish "that is removed by

the first cleaning" a semi-permanent one seems to be stretching a point. But the NRDGA is at least more accurate than the manufacturers who market, as permanently finished, fabrics which aren't even washable!

These chemical finishes cannot themselves be seen; only their effect is apparent. When they are washed out of fabrics (if they're not permanent) their loss cannot be seen, only the loss of the particular quality they were supposed to impart.

Therefore, in connection with washable merchandise particularly, it is essential that the prospective purchaser know the answers to such questions as "how many times can this article be sent to a commercial laundry and still retain its finish?" or "how many times can it be washed carefully at home?"

Many of the synthetic finishes affect a number of the properties of a fabric. Water-repellent finishes, for example, will also render a fabric less susceptible to stains, spots and dirt. A finish which gives chintz a permanent glaze will also make it resist soil and reduce shrinkage.

A hard and fast classification of textile finishes is impossible. But CU lists below a number of the more widely known finishes and finishing compounds, grouped according to the property they are primarily designed to influence.

SHRINKAGE INHIBITORS Most fabrics have a tendency to shrink; the shrinkage is caused in large measure by a relaxation of the fibers after the strains imposed on them in the spinning, weaving or knitting, and finishing processes. Some constructions and fibers show a greater tendency to shrink than others. Wool continues to shrink a measurable amount during repeated launderings; cotton shows by far its greatest shrinkage in the first laundering.

Most widely publicized of several processes for shrinking cotton is "Sanforizing," a mechanical process which shrinks the fabric a controlled amount, so that a residual shrinkage of less than 1% can be guaranteed.

Although this guarantee is made, and is met if the fabric is handled properly under controlled conditions, fabrics labeled "Sanforized Shrunk" have now and then showed much more than the 1% shrinkage. Inadequate policing of licensees, operating under patents owned by Cluett Peabody, which controls the process, may account for that.

Such vague terms as "shrunk" or "pre-shrunk" are meaningless. What is more, when applied to cottons, they are contrary to Federal Trade Commission rulings that statements in connection with shrinkage must be accompanied by disclosure of the remaining residual shrinkage in percentage.

Some rayons give trouble by stretching or sagging, others by shrinking. To stabilize rayons, a number of synthetic resin finishes have been developed. Too often, the information that the fabric has been treated is not passed on to the consumer. One process indicated on the finished garment is "Sanforset," a synthetic resin treatment for use on viscose rayons, which claims to reduce residual shrinkage to less than 2%. With wool, the Texturity Label, among others, makes the same claim.

These finishes control shrinkage by setting the weave. Therefore, there is little or no loss in size in the fabric when treated with finish as there is with controlled shrinking operations. In many cases, where the finish leaves residual shrinkage, controlled shrinking is still used.

CREASE AND CRUSH RESISTANCE Wool possesses a natural resilience which enables it to return to its original shape after distortion. Crease- and crush-resistant finishes are designed to give this property to non-animal fibers like cotton, linen and rayon, which wrinkle very easily.

Such finishes have greatly increased the serviceability of rayon pile velvets, and are in large measure responsible for the success of the newer men's Summer suitings and of many rayon dress fabrics.

In addition to imparting greater springiness, treatment for crease- or crush-resistance will also tend to reduce slippage, sagging and shrinkage. There is, of course, no such thing as a completely crease-proof or crush-proof fabric, for such a fabric would be as stiff as a board.

Some manufacturers and retailers caution that crease-resistant fabrics must be handled with care—washed in lukewarm water, squeezed gently, and the like—an indication that these finishes are not completely permanent.

The basic patent in this field is held by the Tootal Broadhurst Lee Co., Ltd. Fabrics which they process bear the trademark Tebilized. Other crease-resistant fabrics are marketed under such names as Vitalized, Martenized, Sheltonized, Magicvel, Pamilla.

WATER REPELLENCY Water-repellent fabrics are one of the earlier developments in treated fabrics. Here, also, the newer synthetic treatments have found application. Dozens of trademarked finishes are on the market, among them Aqua-sec, Aquarol, Aridex, Cravanette, Impregnole, Koroseal, Neva-wet, Rainfoe, Zelan.

You cannot tell by looking at a fabric whether it has been rendered water-repellent. These finishes are invisible (the chemical has penetrated into the fabric and fiber) and are not to be confused with fabric coatings such as are used for water*proofing*. Water-repellent finishes enable a fabric to shed water, but leave it with some porosity.

Claims as to the permanence of these finishes vary greatly. Du Pont claims that Zelan will last the life of the garment. Other finishers, such as Cravanette and Impregnole, offer refinishing services, indicating that permanence is not implied.

"PERMANENT" CRISPNESS Under this head come the durable (though hardly permanent) finishes which eliminate the need for starching, and sometimes even for ironing. They are widely used on curtain fabrics. Some of the finish is lost with successive launderings, so that care in handling is essential.

This type of finish also helps the garment maintain its size and shape, reduces thread shifting, and, by making for a smoother surface, renders the fabric somewhat spot-resistant. Among the trademarked finishes of this type on the market are Dightonized, Duralized, Permaset, Perma-Starch, Sabel, Staze-Rite, Wata-set.

Another type of "permanent" crispness is employed in the fused collars used in many men's shirts. Here, cellulose acetate either in the form of yarn or coating, is used as a lining within the collar, to which are fused the outer layers of the collar. Synthetic resin coatings are also used in the linings. Properly made, these produce collars which have the trim smoothness of stiff collars. They do not, however, wear as well as untreated soft collars.

"PERMANENT" GLAZE This is really a coating on the surface of the fabric, which produces a glazed finish on such materials as chintz; it resists removal by washing, and has a stabilizing effect on the fabric. Vitalized and Everglaze are among the trade terms used to describe this type of finish.

MOTH RESISTANCE In recent years the depredations of moths have been receiving increasing attention. Resistance to them is usually imparted to a fabric by the use of chemicals which have one or more effects on the moth larva. It may be a poison, which kills the larva that feed on the fabric; it may be an agent which renders the fabric inedible; or it may be merely a deterrent.

Many upholstery manufacturers issue a five-year guarantee, and it is well to insist on a guarantee in connection with claims of moth-proof qualities. It's not at all certain just how effective this protection may be.

MEDICAL SECTION

HAROLD AARON, M. D., *SPECIAL MEDICAL ADVISER*

MEDICAL CONSULTANTS: **Dr. Anton J. Carlson**—Chairman, Dep't of Physiology, University of Chicago; Past President, American Physiological Society; **Dr. Theodor Rosebury**—Assistant Professor of Bacteriology, College of Physicians & Surgeons, and School of Dental and Oral Surgery, Columbia University; **Dr. Marion B. Sulzberger**—Ass't Professor of Clinical Dermatology and Syphilology, New York Post-Graduate Medical School, Columbia University; Editor, *Journal of Investigative Dermatology.*

CU's Medical Consultants give technical advice on matters of medicine which lie within their fields. CU is responsible for all opinions concerning social, economic and public health questions.

Do You Need a Laxative?

New advertising claims for the bulk-producing laxatives try to make you think so. CU here discusses the value and effect of these "natural" cures for constipation

"THERE is probably no greater enemy of good health than faulty elimination. Case records in a great hospital showed that 85% of the patients were troubled with poor elimination and that when this condition was relieved practically all other complaints vanished. What stronger evidence is needed to show that it is very dangerous to neglect constipation!"

That's a quotation from a leaflet advertising *Kaba*, the "natural laxative," produced by the Battle Creek Food Co., Battle Creek, Michigan. Battle Creek is notorious for food fakes and diet fads and it is up to its usual health flim-flam in the exploitation of *Kaba*.

The quotation is, in fact, a compact summary of the most important misunderstanding about that commonest ailment, constipation.

Readers of the series of articles on constipation in the REPORTS[1] or in the book *Our Common Ailment*[2] are familiar with present scientific knowledge about this subject. During the past two years, however, the consumer and doctor alike have been exposed to a virtual broadside from the producers of "natural laxatives" explaining why these laxatives are the salvation of the regular bowel movement. The new propaganda calls for a new appraisal.

THE notion that a bowel movement a day is necessary to good health is hard to dislodge. And it is clear that an important factor in perpetuating the belief is the "Battle Creek" type of advertising.

The simple fact is that the number of bowel movements per day or week varies a great deal among people. Just as some people have a normal pulse rate of 60 beats per minute and others a normal rate of 80 per minute, so there is a variation in rates of bowel evacuation.

It may be normal for one person to have two movements a day and for another to have one in two or three days.

The touchstone of the "normal" movement is that it is produced without too much effort or straining, and without indigestion, cramps in the abdomen or pain in the rectum. If the evacuation is comfortable then it doesn't matter how often or how infrequently it occurs.

Furthermore, bowel movements don't have to be "regular." Many people feel that unless they have a movement at a certain hour, their bowels will generate a "toxin," or suffer injury. If the bowels are let alone, neither will happen. Everyone occasionally experiences an interruption in the natural rhythm of the bowel. It's usually caused by travel, change in diet, or most often, emotional upsets. But there are seldom any damaging consequences. In a couple of days the normal rhythm is restored spontaneously.

A sure way of starting the laxative habit, however, is to get panicky and start dosing with *Sal-Hepatica* or other harsh laxatives.

If you can't wait for a spontaneous return of bowel rhythm, try an enema consisting of a teaspoonful of salt and a pint of tepid water. If an enema isn't possible, take a mild laxative such as Milk of Magnesia or one or two Seidlitz powders. But stay away from irritating laxatives.

While long standing chronic constipation won't cause any serious symptoms or disabilities, it is responsible for instances of rectal trouble, especially when a cure is attempted with harsh laxatives or cathartics.

DURING the past few years the traditional cathartic has been replaced, in popular use, by the bulk-producing laxative. And important among these bulk producers are the laxatives derived from plant gums.

Advertising claims for the gummy laxatives—*Kaba*, *Serutan*, *Saraka*, &c.—stress that these products are "Nature's Way" of combating constipation.

"*Kaba*, unlike drug laxatives, is not habit forming," we are told. *Serutan* "helps exercise intestinal muscles." *Saraka* provides "safe 'softage,' gentle, moist lubricating bulk"—which "gently stimulates weakened intestinal muscles." The emphasis in the advertising is on "certain," "safe" and "natural" action.

Doctors have long recognized that in a small percentage of constipation cases, inadequate or incomplete evacuation is caused by excessive absorption of water from the colon so that a small, relatively dry stool reaches the terminal part of the bowel. When it became known that these cases could be helped by the introduction of a bland material which retains the water in the bowel and forms a bulk sufficiently large to facilitate evacuation, bulk-producing laxatives became popular.

One of the first to be widely sold was agar-agar. Soon psyllium seeds and similar plant materials with more powerful action began to displace agar in popularity as a bulk producer.

When the whole seeds were found to be too irritating to the digestive tract, a blander laxative product was obtained by removing the outer hull and processing the seed into flakes, powder or flavored granules.

The most recent addition to the group of bulk-producing laxatives are the tra-

[1] CU REPORTS, May to November, 1937.
[2] A CU publication. See back cover.

NOT A DRUG?

The facts don't jibe with claims

gacanth gums—karaya, bassora gum and others. *Kaba* is derived from Karaya gum and *Saraka* from Bassora.

Agar, psyllium seed and its derivatives, and the tragacanth gums are "colloid" laxatives as well as bulk producers because they swell up with water to many times their volume. In a glass the tragacanth group will swell up to 75 times its volume; the psyllium derivatives, to 35 times their volume; and agar, to about eight times its volume.

In the intestine the ratio of swelling is tragacanth, 20 times; psyllium derivatives, 15 times; and agar-agar, 6 times. Consequently, the tragacanth group is most effective as a bulk producer.[3]

The colloid laxatives do not act solely by absorbing water and forming a large bulk in the intestine. All except those in the tragacanth group are broken down in the intestine by bacterial and chemical action. Certain substances split off from the gums and, like the chemical laxatives, act as an irritant to the bowel.

Thus the claims of *Serutan* and kindred products to "natural" and drugless action are false. All the gum laxatives have some chemical action, and the psyllium derivatives (which includes *Serutan*) are especially irritating.

Though some persons will have a bowel movement every day with these laxatives, the movement is not necessarily the result of gentle stimulation of the intestinal muscles, as advertising claims. Often the evacuation is due to the fact that the bowel fills up tremendously with a bulky, gummy residue which overflows into the rectum from which it is expelled.

The process may cause "gas," distension, indigestion and rectal trouble for some people despite the fact that they have a "natural" bowel movement every day.

More seriously, these laxatives may swell until they completely block some part of the digestive tract. Doctors have reported a few cases in which obstruction in the gullet and in the small and large intestines has been caused. They advise that elderly people and those with disease anywhere along the digestive tract should avoid all bulk producers.

In the case of elderly people, the intestinal and abdominal muscles and diaphragm are too weak to propel bulky material along. Bulk-producing laxatives may cause a block somewhere along the intestinal tract or produce such severe straining that heart attack occurs.

In persons with an irritation in the digestive tract, the gummy material may cause further irritation or become obstructed at a point of irritation. In spastic constipation—one of the most common forms—the entire digestive tract is in a state of hyper-irritability, and bulk producers may increase cramps, "gas," distension and frequency and looseness of stools.

No matter what the state of the intestine, no one should take excessively large doses of the gummy laxatives. Anyone who does risks the possibility of obstruction.

Because of their marked irritant effects and poor absorbability of water, whole psyllium seeds should never be taken. The psyllium derivatives such as *Serutan*, while less irritable than the whole seed, are likely to cause trouble in persons with sensitive intestines. In addition, a few people may find that they are allergic to these laxatives and suffer from violent headaches and other symptoms when they are taken.

When taking colloid laxatives, drink at least one glass of water with each dose and follow it by one or two more glasses. This insures proper swelling, moistening and lubrication of the gummy material and aids evacuation.

THERE is no doubt that the gummy laxatives are an advance over the old familiar cathartic remedies and that they have proven useful to many people. But they are not "cure-alls."

Some people have found them anything but satisfactory. Others have been forced to change brands or stop using them altogether, because the bowel has become accustomed to the substance and fails to respond to it any longer. For these reasons, there is nothing "certain" about the action of gummy laxatives.

Dr. Walter C. Alvarez of the Mayo Clinic, a leading specialist on digestive and intestinal disorders, has often observed that laxatives may work for a certain period and then become completely ineffective. This is no less true for the gummy laxatives than for chemical agents such as epsom salts.

Remember that the treatment of constipation must be suited to the individual to be successful. Exercises, toilet habits, laxatives, gums, diet, enemas, all have their place. What may be useful for one person may be useless or harmful to another. And everyone would be better off without the falsehoods and panic propagated by laxative and drug manufacturers.

Drs. Gray and Tainter advise that, of the bulk producers, those which are processed into granules are preferable because they do not stick to the teeth and cause swelling in the mouth or œsophagus. The karaya gum products are all available as granules.

Many of the bulk producers are fortified with vitamin B_1 with or without other members of the vitamin B complex. The vitamin content adds nothing to their value. It hasn't been proven yet that a lack of vitamin B is responsible for poor bowel function. And the fortified bulk producers don't fill the requirements of the body for all of the necessary B vitamins. It is cheaper and more effective to obtain vitamins from foods or other natural sources such as brewers' yeast.

[3] Data based on an article by Drs. H. Gray and M. L. Tainter in the *American Journal of Digestive Diseases*, April 1941.

The FTC vs. Knox Gelatin (At Last)

UNTIL the early months of 1939 the Knox Gelatin Co. was engaged in selling gelatin to the American consumer. Then, on the crest of a smash-bang advertising campaign, this substance which made a pleasant dessert and which doctors occasionally suggested because of easy digestibility, became a seventh wonder of science. Some poorly controlled experiments had been performed, some half-baked conclusions had been drawn, and lo! the Knox Co. had become a benefactor of society.

Full-page advertisements appeared in newspapers and magazines describing the health wonders that the tired reader could obtain by swallowing gelatin. "More endurance! . . . gelatin, just plain unflavored gelatin, increases endurance" said Knox. ("Amazing dis-

covery proves unflavored gelatin energy vitalizer" said Cox, a competitor. The advertisements looked alike and they misled alike.)

In the June 1939 issue of CU REPORTS, about one month after the new advertisements began to appear, CU pointed out why they were misleading and why there was no proof that gelatin could fulfill any of the extraordinary claims made for it. From time to time thereafter, CU REPORTS exposed the misleading twists and angles of the advertising as it developed. In May, two full years after the advertising started, the Federal Trade Commission got around to the case, and the Knox Gelatin Co. entered into a stipulation in which it agreed to stop claiming, directly or by implication,

> . . . that scientific laboratory tests have established as a matter of scientific fact that *Knox* Gelatin increases vim and vitality, increases endurance, builds resistance to fatigue, cuts down and lessens fatigue, increases stamina and "staying power," curbs tiredness, restores vigor or stores energy.
>
> That *Knox* Gelatin or *Knox* Sparkling Gelatin prevents fatigue; keeps one in top form for working hard and playing hard; enables a person to sleep better or awaken more refreshed; lessens the seriousness of athletic injuries or causes minor athletic injuries to respond quicker to treatment; increases muscular work capacity 50% to 100% or is of any substantial benefit in increasing muscular work capacity; doubles energy or increases energy output 37% to 240% or is of any substantial value in increasing energy output; is an amazing discovery or stores energy.

Consumers will now be spared those streamlined, this-is-more-for-your-sake-than-mine advertisements. But they may wonder why such advertising was permitted to mislead the public for two years before action was taken and what will next be sold to the American public as an "amazing vitalizer." Among other things, the FTC's order against Knox proves the need for stronger and faster-working legislation.

Coming Reports

IN AN early issue of the REPORTS the Medical Section will present an important article on "The Treatment of Baldness and Dandruff," prepared by Dr. Marion B. Sulzberger, editor of the Journal of Investigative Dermatology and one of CU's Medical Consultants, in collaboration with Dr. Rudolf Baer, who has been associated for several years with Dr. Sulzberger.

Also scheduled for early appearance is a report on recent multiple-vitamin preparations.

Teel: It Challenges Pastes & Powders

SCIENTIFIC TESTS SHOW HOW
LIQUID DENTIFRICE AVOIDS THIS INJURY TO YOUR TEETH
8 OUT OF 10
Millions Are Injuring Their Teeth —
Be Safe! Brush Your Teeth the Liquid Way
NEW LIQUID DENTIFRICE CLEANS TEETH SAFELY

TEEL'S ADVERTISING

. . . attacks pastes and powders. But brushing still counts most

"8 OUT of 10 Adults Risk Cutting Cavities into the Exposed, Soft Part of Teeth by Brushing with Leading Tooth Pastes and Powders," advises the inevitable bearded "scientist" in recent ads for Procter and Gamble's liquid dentifrice *Teel*. "Millions are injuring their teeth," he warns. "Be safe! Brush your teeth the liquid way."

Complete with scientific hocus-pocus, the ad explains:

> This injury is caused—not by the toothbrush itself—but by regular brushing with the abrasives or scouring materials contained in all leading tooth pastes and powders. Gradually, as the months go by, these abrasives cut cavities into the soft part of the teeth along the gum lines exposed by shrinking gums, where there is no hard enamel to protect them.

This pleasant little piece of copy was appearing last month in a number of eastern and midwestern newspapers, though many publications are known to have turned it down.[1] We suspect that it was rejected, not for the protection of consumers, but because of anticipated objections from other large tooth paste advertisers.

One advertising journal, indeed, feared lest such ads "undermine confidence in dentrifices of all kinds," while another regretted that such a thing could happen "in this age when honesty and decency in advertising is getting to be more and more fashionable."

The *Teel* attack was not without that germ of truth which the best misleading advertising always has in it. Tests by CU and by the National Bureau of Standards have disclosed excessive abrasiveness in a number of tooth pastes. On the other hand, the majority of brands have not been found to be at all harmful in this respect.

The fact is that the fearsome cavities described in the *Teel* ads result from improper brushing (particularly "cross-brushing") rather than from the mild abrasives (usually chalk) found in most tooth pastes and powders. If you use one of the numerous "Best Buy" or "Also Acceptable" pastes or powders rated in your BUYING GUIDE and brush your teeth properly, you can safely ignore *Teel's* dramatics. And if you don't brush your teeth properly, *Teel* won't serve you any better than the pastes or powders. (See "How to Brush Your Teeth," January 1941 REPORTS.)

The *Teel* package itself recommends the use of an abrasive (salt or baking soda) if "in spite of the daily use of *Teel*, you are troubled with stained film on teeth."

And where does this "stained film" come from? The Council on Dental Therapeutics of the American Dental Ass'n answers:

> This office has received reports from members of the dental profession indicating that the use of *Teel* may be associated with the formation of dark stains on the teeth. Apparently these stains may be removed with the aid of tooth pastes or tooth powders or by the usual dental prophylaxis. In the opinion of this office, these stains may be produced by a combination of two factors—inadequate brushing and *deposition of colored material from the dentifrice.* (Italics ours)

Teel's copywriters claim that tooth pastes and powders are generally dangerous. The American Dental Ass'n actually recommends paste or powder to remove dark stains which may result from the use of *Teel*. You pays your money and you takes your choice.

Meanwhile, on the basis of the ADA's opinion relative to the formation of stains, CU changes its old "Acceptable" rating of *Teel* to a tentative "Not Acceptable." A further report on *Teel* will be made in the near future.

[1] CU members may find food for thought in the fact that *Teel's* pseudo-scientific copy found its way into several papers which have seen fit to refuse CU's advertising.

GENERAL SECTION

CONSUMER NEWS AND INFORMATION

Scientists and Consumers

. . . get together in Durham, N. H. for the Annual Conference of Consumers Union and the American Ass'n of Scientific Workers

IN Durham, N. H., tiny, tree-shaded university town a few miles in from the Granite State's coastline, the American Ass'n of Scientific Workers and Consumers Union last month met for their annual Conference. Theme: "Science in the Service of the Consumer."

That was the theme a year ago, too, when the first of these Conferences was held at Amherst, Mass., with Massachusetts State College as host.

Host at this year's Conference was the University of New Hampshire, at whose invitation the Conference was made a part of the University's Seventy-Fifth Anniversary Jubilee.

CU'S PRESIDENT WARNE

Representing government, Miss Loda Mae Davis, member of the staff of Harriet Elliott's Consumer Division in the Office of Price Administration and Civilian Supply, addresed the conferees at one of the main sessions on consumers and the national defense program.

At the main dinner meeting, with CU's President Colston Warne serving as general master of ceremonies, the AASW contributed a demonstration of frequency modulation under the direction of L. B. Arguimbau of the Dep't of Electrical Engineering, Massachusetts Institute of Technology.

Speaker at the dinner was Dr. Gerald Wendt, member of CU's Board of Directors, former Dean of Chemistry and Physics at Pennsylvania State College. His subject: "The Scientist Examines the Consumer."

The functioning, aims and achievements of consumer cooperative societies, and their particular importance in these days of rising prices and declining quality standards, were examined at the luncheon meeting on the second day of the Conference by two speakers: Wallace Campbell of the Cooperative League of the U.S.A. and Hartley Cross, long active in the cooperative movement and also a Director of Consumers Union.

Other highlights: Architect Edwin B. Goodell's discussion of "Houses for the Consumer"; a review of present knowledge about "Diet and Teeth" by Dr. Theodor Rosebury, Dental Bacteriologist of Columbia University; an analysis of "College Courses on Marriage" by Dr. Norman E. Himes of the Dep't of Sociology at Colgate University. Dr. Harold Aaron, CU's Special Medical Adviser, spoke to the Conference on "A Nutritional Program for America."

Space limitations in the REPORTS make it impossible to publish the proceedings of the Conference here. They are being prepared for publication in book form.

NEW DIRECTOR RAUTENSTRAUCH

CU's Election and Fifth Annual Meeting

8,354 CU members cast their ballots in the recent election of CU Directors (267 ballots were declared invalid). One new Director was elected: Dr. Walter Rautenstrauch, Professor of Industrial Engineering, Columbia University. Re-elected were Arthur Kallet, A. J. Isserman, Bernard J. Reis. Complete results of the voting:

Arthur Kallet	*7,088*
Bernard J. Reis	*6,418*
Walter Rautenstrauch	*6,333*
A. J. Isserman	*4,916*
Asho Ingersoll	*2,318*
Annette Rubenstein	*1,606*
Elizabeth Mills	*1,488*

At CU's Fifth Annual Meeting, held on the first morning of the Conference, reports on the organization's work prepared by President Colston Warne, Director Arthur Kallet, Publications Director Dexter Masters, Special Technical Consultant W. M. Malisoff, Treasurer Bernard Reis and Staff Representative Sidney Wang, were submitted to the members present.

Partial tabulations of answers to the questionnaire recently mailed to all members were given (a full summary will appear in an early issue of the REPORTS.)

The Tax Burden

. . . has shifted increasingly to consumers' backs in the past 10 years. The new program being worked out in Congress offers no relief

THE NEW tax program, now under hot and heavy discussion in Congress, will hurt living standards almost as much as the inflationary rise in prices. For the proposed new taxes are not based on the democratic principle that payment should be in proportion to income; instead, they increase the already heavy load carried by low and middle-income groups.

Back of these heavy new taxes are the astronomical expenses of national defense. No one in the government seems to know how much the arms program will eventually cost — various official estimates have run from $40 billion to $100 billion but these are guesses which are hiked up with every new development on the international scene.

During the 1941-42 fiscal year which began July 1, however, the United States will spend about $20 billion for armaments and ordinary government operations. And the Treasury wants to pay about two-thirds of this giant sum out of taxes. Consequently, the pending tax legislation is designed to raise an additional $3½ billion in new taxation, bringing the total Federal take up to the $13 billion level.

Examination of the new taxes shows that they do not strike at defense contract profiteering and the speculative profits of price inflation. They are not based on the principle declared by the President: "It is our duty to see that the (tax) burden is equitably distributed according to ability to pay so that a few do not gain from the sacrifices of the many."

The new taxes will only accentuate the unfair proportion paid by the poorest groups in the population, an unfair load which grew progressively heavier throughout the 1930's. In 1930, two-thirds of Federal tax revenue was derived from corporate and income tax, and only one-third from consumer taxes. By 1940, only one-third of the government's revenue came from corporate and income taxes, while the rest was taken indirectly out of the pockets of consumers through various taxes on articles of consumption.

What this meant to the low- and middle-income groups has been reported in Monograph No. 3 of the Temporary National Economic Committee, "Who Pays The Taxes?" In 1938-1939, the income group making less than $500 a year paid 22% of its total income in taxes of all kinds. The group earning between $500 and $1,000 paid out 18% of its annual income for taxes. The income group between $1,000 and $3,000 paid approximately 17%. And yet income groups up to $10,000 a year paid only 17.9%—less than the rock bottom under-$500 group. Altogether, income groups earning $3,000 a year or less paid 59.5% of all taxes.

In the new tax scheme, the government has again failed to use the tax weapon against corporations and individuals who are enjoying lush defense profits. Only about one-third of the new revenue, about $1¼ billion, would come from new taxes on corporations. General corporate taxes have been raised in the proposed scale by only an additional 6%.

No attempt has been made to get a really adequate excess profits law, although the Treasury told Congress that the old law enabled many corporations holding defense contracts to make huge profits without paying any excess profits taxes at all. The following Treasury statement points out what has happened.

> In the absence of complete excess profits returns an examination has been made of published financial data for certain corporations. One company whose profits in 1940 were 3,000% larger than in 1939 is subject to no excess profits tax whatever on 1940 earnings and this is a company which has thus far received over $70 million of defense contracts. A large industrial company which has received over $250 million of defense contracts and had earnings in 1940 nearly 200% larger than in 1939 will pay no excess profits tax. It appears that only 5 out of 12 large integrated steel companies will be subject to excess profits tax on the income of 1940, although steel companies have in general received huge amounts of defense orders.

But the House Ways and Means Committee rejected the mild increases recommended by the Treasury, and the proposed excess profits taxes would bring in about $700 million instead of the $800 million suggested by the Treasury.

The new excess profits tax would yield the U. S. only a little more than 5% of its total revenue; but in 1918 the then-existent excess profits law brought the government $2½ billion, or about one-fourth of its revenues, without seriously interfering with the production of 18,000 millionaires.

This leniency towards corporate taxpayers contrasts strongly with the burdens which are being prepared for consumers. About $933 million in new excise taxes on consumption goods are contemplated, although such indirect taxes already account for three-fifths of the present revenue.

Proposals now stand for taxes on all movie tickets above 9¢; a 9¢ a pound tax on tubes and 5¢ a pound tax on tires; higher taxes on telephone messages and telegrams; a 5% tax on all transportation fares exceeding 35¢; a 5% tax on telephones; 10% on furs; 10% on photographic equipment; 10% on refrigerators; 10% on sporting goods and equipment; a 2¢ tax on every 1,000 matches; a 10% tax on radios; higher taxes on phonographs and records.

This is only a partial record, and there are suggestions of a 20% tax on automobiles and similar taxes to discourage the purchase of consumer durable goods of this kind.

In addition, consumers will be hard hit by the new income taxes which strike most heavily at the middle-income groups.

The increases run between 100% and 200% for these middle-income brackets. The increases in the higher brackets are much smaller.

Consumers Union believes that a fairer and more equitable tax program can be drawn up, which will not allow profits to soar while consumers pay higher taxes and higher prices. In subsequent issues, we shall discuss concrete proposals.

CONSUMERS UNION

17 Union Square W., N. Y. C.

I am enclosing $..... for which please send me the material I have checked below:

☐ **Special Combination Offer—** "Look Before You Cook," "Good Health & Bad Medicine," "Our Common Ailment," "Wines & Liquors."—Price to CU Members—$3.

☐ "How to Buy Furs"—50c.

☐ Bound Volumes, 1936-37, 1938, 1939 —each $2. 1940—$2.50. (Check year.)

☐ Complete Set of Volumes Ordered Together—$7.

☐ Any Three Volumes Ordered Together—$5.

NAME.....

ADDRESS.....

.....7SPI

Labor: Men's Socks, Radios, Knives

MEN'S SOCKS

Sixty-two thousand workers are employed in the manufacture of seamless hose—men's socks and women's seamless stockings. Almost half (27,000) earn below 36¢ an hour, or less than $14.40 a week. These workers are expected to get raises through the action of the American Federation of Hosiery Workers (CIO) which petitioned last April for a 36¢ an hour legal minimum. The new rate has been unanimously recommended by a committee representing both union and employers. Average wages are expected to rise to 48¢ an hour or $19.20 a week.

The following information on labor conditions under which men's socks rated in this issue are manufactured was supplied by the union and by many of the manufacturers:

Gotham (Gotham Silk Hosiery Co.). 2,500 employees, working on both full-fashioned and seamless hosiery, have a 3-yr. AFHW closed shop agreement, providing a minimum wage of 40¢ per hour. Average earnings are 55¢ an hour for women, $1 for men (covering both full-fashioned and seamless production). Workers average 45 weeks a year employment.

Holeproof (Holeproof Hosiery Co.). Although *Holeproof* full-fashioned stockings are union-made, the men's seamless sock plant is completely non-union.

Interwoven (Interwoven Stocking Co.). One plant operates under an agreement with the AFHW. Others are non-union. "We have reason to believe that we are one of the six highest paid of the 400 seamless hosiery mills in the United States," Interwoven wrote CU. This is true of the Martinsburg, W. Va. plant, where strikers won a 10% wage increase. But in the other plants minimum and average wages are lower, the union states.

Phoenix (Phoenix Hosiery Co.). Full closed shop contract with AFHW. The minimum wage is 40¢ per hour, average is 50¢. "Highest wage seamless mill in the United States . . . one of the model shops," comments the union.

Real Silk (Real Silk Hosiery Mills). The full-fashioned department is under contract with AFHW, but the seamless manufacturing department is non-union. Nevertheless, comments the union, this is "one of the highest wage mills in the South."

Westminster (Nolde & Horst Co.). The full-fashioned department is organized, with excellent wage minimums, but the seamless department is non-union.

Wilson (Wilson Bros.). Sock department is under contract with Amalgamated Clothing Workers. Minimum rate is 32½¢ per hour (the legal minimum). Average rates differ according to department but range up from 45¢.

Munsingwear, Schulte, Sears,' Thom McAn, Ward's and ***Woolworth*** are all distributors' brands. CU has been unable to get labor information about these or the ***Longwear*** and ***Kinney*** brands.

CONSUMERS UNION

17 Union Square W., N. Y. C.

I enclose $3.50 for which please

☐ Enter me as a member of Consumers Union and send me the Reports for one year.

☐ Renew my membership for one year.

I enclose $4 for which please

☐ Enter me as a member and send me the Reports and Bread & Butter for one year.

☐ Renew my membership for one year and send me Bread & Butter to run concurrently with the Reports.

I enclose 50¢ for which please

☐ Send me Bread & Butter for the duration of my CU membership (up to one year).

I enclose $1 for which please

☐ Enter my subscription to Bread & Butter for one year.

I agree to keep confidential all material so designated.

NAME .....

ADDRESS .....

.....?CUI

PORTABLE RADIOS

As long ago as 1936, CU reported on the low wages and anti-union policies of the Emerson Radio Corp. At that time the majority of brands CU tested were made under open shop conditions, at low pay to the people who made them.

Today the situation is reversed. Most radio manufacturers now bargain collectively with their employees.

Still, Emerson holds out. When the United Electrical, Radio and Machine Workers (CIO) called a strike in the plant last April, it was on the same old issue of low wages (as low as $12.80 a week), speed-up, and anti-union policy. The strike was settled May 10.

Emerson promised a 10% wage increase and rehiring of all strikers "within a reasonable time." Six weeks later, the union states, all strikers had still not been rehired and new workers who could be recruited into the company union were being hired instead. (The company did not reply to CU's request for information on this point.)

The following portable radios tested by CU are union-made, under contract with the International Brotherhood of Electrical Workers (AFL):

Detrola
Farnsworth
Garod
Lafayette **Model No. C-125 and EB-164**
Pilot
Ward's **Cat. No. — 672E**

The following are union-made, under contract with the UERMWA:

DeWald
Fada
General Electric
Lafayette **Model No. JS-114-B1**
Philco
RCA
Sears' **Model Cat. No. — 6561**
Westinghouse

The following brands are not on the union-made lists of either AFL or CIO:

Admiral
Allied's Knight
Andrea
Emerson
Motorola
Sentinel
Zenith

The Firestone Tire & Rubber Co. apparently does not manufacture the set that carries its name. CU has no labor information on it.

KITCHEN KNIVES

CU HAS been able to get definite information about only four of the manufacturers of knives rated in this issue. Since the others were not named as union shops by any of the eight unions to which CU wrote, and did not themselves reply to CU's request for labor information, it may be assumed that they are non-union.

Cattaraugus (Cattaraugus Cutlery Co.), ***Robeson Shuredge*** (Robeson Cutlery Co.). Both companies replied that they were open-shop companies. Both cited their small labor turnover. Minimum weekly wage for beginners in both shops was given as $12. Average wage: $18 at Cattaraugus; $23.40 at Robeson.

Kutmaster (Utica Cutlery Co.). The company operates under a closed-shop contract with the Steel Workers Organizing Committee (CIO). Minimum weekly wage is $12; average, $18.

Universal (Landers, Frary & Clark). The company operates under contract with the United Electrical, Radio & Machine Workers of America (CIO). Minimum wage is $18 a week, $6 more than in the other shops about which CU has information.

Cumulative Index

Each issue of the Reports contains this cumulative index of principal material carried since publication of the 1941 Buying Guide issue. By supplementing the Buying Guide index with this one, members can instantly locate current material and keep abreast of changes resulting from new tests. Page numbers run consecutively beginning with the January 1941 issue. January, 1–28; February, 29–56; March, 57–84; April, 85–112; May, 113–140; June, 141–168; July, 169–196.

Reports starred replace material in the 1941 Buying Guide.

Air conditioning, home..127
American Medical Ass'n
—& Group Health....132
Applesauce, canned 46
Aspirin 12
Autos, 1941* 33
—1941 & 1942 survey..157
Batteries, radio 185
Blankets
—cotton 117
—part wool 5
Bleaches, household 22
Carbon paper 90
Clam chowder, canned... 94
Cleansing tissues* 74
Cold remedies, govt action 76
Colds
—& gelatin 24
—& vitamins 48
Consolidated Edison offer 121
Developers, fine grain*... 61
Diet, minerals 49, 76
Egg beaters* 69
Fishing equipment 154
Flashlight batteries* 71
Flour, fortified 75
Fluorescent lighting 15
Ford Six 175
Furniture
—finishing 47
—polishing & care..... 99
—porch & garden..... 150
Gelatin
—Knox 24, 190
—plain & prepared... 125
Grapefruit, canned 98
Grapefruit juice, vitamin C 44
Group health 132
Heating plants—how to buy 176
Iodine & goiter.....129
Iron & anemia.....101
Knife sharpeners 181
Knives, kitchen 179
Labor notes
—auto radios 136
—autos 54
—blankets, cotton 136
—blankets, part wool... 27
—knives 194
—radios, portable 194
—sheets 27
—shirts, men's 109
—slips, women's.....166
—socks, men's 194
—table coverings.....166
—towels 27
Laxatives 189
Meat grading 78
Milk, raw & pasteurized..131
Minerals (diet) 49, 76
Mushroom soup, canned.. 94
Nutrition conference.161, 163
Oilcloth, table.....160
Orange juice, vitamin C.. 44
Perfumes 122
Permanent waves.....148
Pineapple juice, vitamin C 64
Pumpkin, canned 98
Radios
—auto* 119
—how to buy..... 18
—portable* 183
Refrigerators, 1941*.....145
Sheets* 9
Shirts, men's* 96
Ski equipment* 13
Slips, women's*.....152
Soap, Swan & Ivory..... 70
Socks, men's* 173
Teel 191
Teeth, how to brush..... 23
Textile finishes 187
Toilet tissues* 72
Toilet water 122
Tomato catsup* 46
Tomato juice, vitamin C.. 64
Towels, bath* 7
Typewriter ribbons 92
Vanilla extracts 67
Vitamin C, fruit juices.44, 64
Vitamins
—& colds 48
—& flour 75
Window curtains 65

ARE YOU

Planning to Take Advantage of the August Fur Sales?

Do you know how?

It's all very well to get hot and bothered trying on fur coats in sweltering August in order to save money. But you run a lot less risk of getting hot and bothered afterward if you know in advance how to judge skins and workmanship, how to guard against deception, what sort of guarantee to get, and then how to take care of your treasure after you've bought it.

How to Buy Furs was prepared by CU to give you all that information in compact, easy-to-digest form. Besides, it gives you some succinct facts about the Fur Market, and a unique Fur Information Chart which tells you all about 70 different kinds of furs —how they wear, where they come from, what their special assets and liabilities are.

Not many copies of this money-saving special REPORT *are available. Order yours now.*

Use Order Form On Page 193

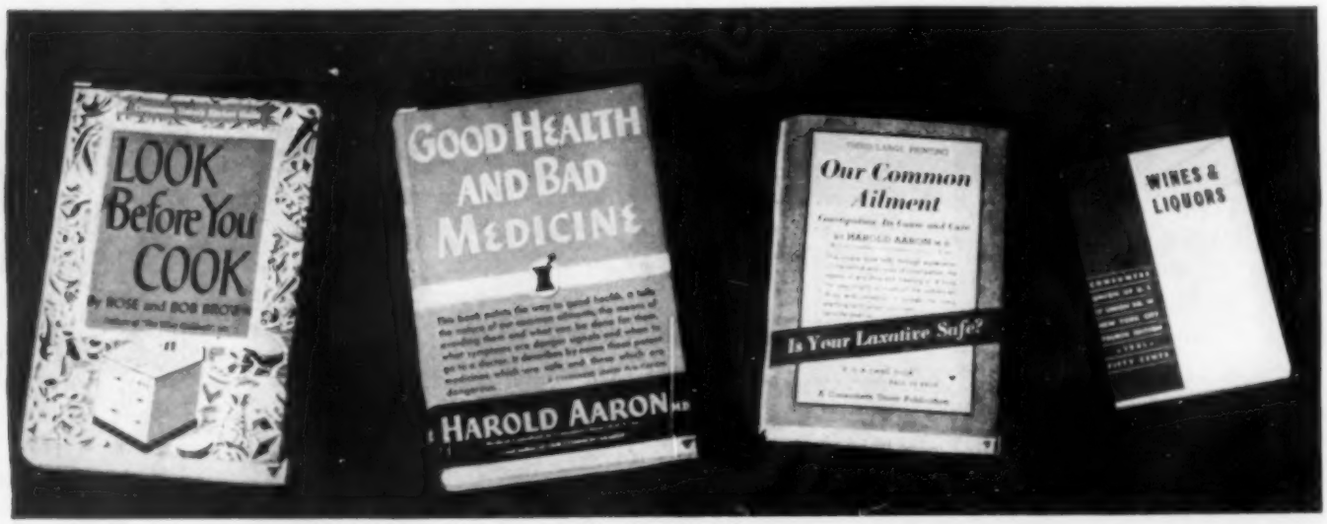
"How to Buy Furs" contains 40 pages, neatly and clearly mimeographed; colorful, illustrated covers.

SHE HASN'T VERY MUCH TO DO WITH OUR STORY

. . . but we had to think of some way to get your attention to tell you about CU's extra special combination book package. Nothing about moonlight and roses in these books, but somebody has to be practical.

HERE ARE 4 BOOKS FOR $3! AT BOOKSTORE PRICES THEY WOULD COST $7.75

THESE books discuss several aspects of Food, Health and Diet. With those fundamental matters under control, you'll be in fine shape to enjoy the lighter moments of Summer. CU offers this combination package of four of its books at a new low of $3 complete. Bought separately, they'd cost $4.50 even at the special CU members' prices; they'd cost non-members $7.75.



Pictures above show Bookstore edition jackets; CU editions have special wrappers

GOOD HEALTH AND BAD MEDICINE by Harold Aaron, M. D. Let this sensible book serve you as a guide to intelligent treatment of any one of dozens of illnesses, ailments or "conditions"—Sinus, Asthma, Hay Fever, High Blood Pressure, too much or too little weight, skin disease. It will assist you to cut through the claims of patent medicine manufacturers. *336 pages, with index. CU edition, $1.50; Bookstore price, $3.*

WINES & LIQUORS. Ratings of imported and domestic whiskies, gins, brandies, rums, cordials and wines, based on laboratory and taste tests made by liquor experts under CU's supervision. There is an enlarged section on American wines, an appendix on mixing drinks and a highly useful index. *Handy, pocket size, paper bound, 160 pages. 50c.*

OUR COMMON AILMENT by Harold Aaron, M. D. Explains the nature and cause of constipation, the means of avoiding or treating it. Turns the searchlight on many well-known drugs and remedies. *192 pages, with index. CU edition, $1; Bookstore price, $1.50.*

LOOK BEFORE YOU COOK by Rose & Bob Brown. Unusual, tasteful recipes, ratings of products used in cooking, handy facts about electrical appliances, cleaning supplies, kitchen accessories — with brand ratings; a chapter on vitamins — and lots more valuable information by two famous food experts, assisted by CU's staff. *416 pages, complete index. CU edition, $1.50; Bookstore price, $2.75.*

USE ORDER FORM ON PAGE 193